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Docket No.: CL001196
Serial No.: 09/820,003
Inventors: MERKULOV, Gennady et al.
Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

1 AAGCGATAGC TGAGTGCGGC GGCTGCTGAT TGTGTTCTAG GGGACGGAGT 51 AGGGGAAGAC GTTTGCTCTC CCGGAACAGC CTATCTCATT CCTTTCTTTC 101 GATTACCCGT GGCGCGGAGA GTCAGGGCGG CGGCTGCGGC AGCAAGGGCG 151 GCGGTGGCGG CGGCGGCAGC TGCAGTGACA TGTCCAGCAT GAATCCCGAA 201 TATGATTATT TATTCAAGTT ACTTCTGATT GGCGACTCAG GGGTTGGAAA 251 GTCTTGCCTT CTTCTTAGGT TTGCAGATGA TACATATACA GAAAGCTACA 301 TCAGCACAAT TGGTGTGGAT TTCAAAATAA GAACTATAGA GTTAGACGGG 351 AAAACAATCA AGCTTCAAAT AGAGTCCTTC AATAATGTTA AACAGTGGCT 401 GCAGGAAATA GATCGTTATG CCAGTGAAAA TGTCAACAAA TTGTTGGTAG 451 GGAACAAATG TGATCTGACC ACAAAGAAAG TAGTAGACTA CACAACAGCG 501 AAGGAATTTG CTGATTCCCT TGGAATTCCG TTTTTGGAAA CCAGTGCTAA 551 GAATGCAACG AATGTAGAAC AGTCTTTCAT GACGATGGCA GCTGAGATTA 601 AAAAGCGAAT GGGTCCCGGA GCAACAGCTG GTGGTGCTGA GAAGTCCAAT 651 GTTAAAATTC AGAGCACTCC AGTCAAGCAG TCAGGTGGAG GTTGCTGCTA 701 AAATTTGCCT CCATCCTTTT CTCACAGCAA TGAATTTGCA ATCTGAACCC 751 AAGTGAAAAA ACAAAATTGC CTGAATTGTA CTGTATGTAG CTGCACTACA 801 ACAGATTCTT ACCGTCTCCA CAAAGGTCAG AGATTGTAAA TGGTCAATAC 851 TGACTTTTTT TTTATTCCCT TGACTCAAGA CAGCTAACTT CATTTTCAGA 901 ACTGTTTTAA ACCTTTGTGT GCTGGTTTAT AAAATAATGT GTGTAATCCT 951 TGTTGCTTTC CTGATACCAG ACTGTTTCCC GTGGTTGGTT AGAATATATT 1001 TTGTTTTGAT GTTTATATTG GCATGTTTAG ATGTCAGGTT TAGTCTTCTG 1051 AAGATGAAGT TCAGCCATTT TGTATCAAAC AGCACAAGCA GTGTCTGTCA 1101 CTTTCCATGC ATAAAGTTTA GTGAGATGTT ATATGTAAGA TCTGATTTGC 1151 TAGTTCTTCC TTGTAGAGTT ATAAATGGAA AGATTACACT ATCTGATTAA 1201 TAGTTTCTTC ATACTCTGCA TATAATTTGT GGCTGCAGAA TATTGTAATT 1251 TGTTGCACAC TATGTAACAA AACAACTGAA GATATGTTTA ATAAATATTG 1401 AAAAA (SEQ ID NO:1)

FEATURES:

APR 1 4 2003

5'UTR: 1-179 Start Codon: 180 Stop Codon: 699 3'UTR: 702

Homologous proteins: Top 10 BLAST Hits

		Score	E
CRA	108000024647144	372	e-102
CRA	18000004923424	332	5e-90
CRA	18000004937406	328	1e-88
CRA	18000004952860 /altid=gi 131785 /def=sp P22125 RAB1_DISOM R	320	3e-86
CRA	18000004995539	313	3e-84
CRA	18000004967528 /altid=gi 92339 /def=pir S06147 GTP-binding	297	2e-79
CRA	18000004880958	282	9e-75
CRA	18000004908714	253	3e-66
	18000005175724	253	4e-66
CRA	335001098696672	251	2e-65

FIGURE 1A



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BLAST dbEST hits:

				Score	E
gi	12867866	/dataset=dbest	/taxon=960	654	0.0
gi	12097820	/dataset=dbest	/taxon=96	654	0.0
gi	12793758	/dataset=dbest	/taxon=960	624	e-177
gi	12338056	/dataset=dbest	/taxon=96	622	e-176
gi	11977068	/dataset=dbest	/taxon=96	609	e-172
gi	10339840	/dataset=dbest	/taxon=960	517	e-145
gi	10349761	/dataset=dbest	/taxon=960	436	e-120
gi	10997958	/dataset=dbest	/taxon=96	385	e-105
gi	10996533	/dataset=dbest	/taxon=96	381	e-103

EXPRESSION INFORMATION FOR MODULATORY USE:

library source:

From BLAST dbEST hits:

gi|12867866 Fetal brain gi|12097820 Adrenal gland

gi 12793758 Brain neoroblastoma cell line

gi|12338056 Adrenal gland

gi 11977068 Skin melanotic melanoma

gi 10339840 Uterus leiomyosarcoma

gi 10349761 Skin melanotic melanoma

gi 10997958 Placenta gi 10996533 Placenta

From tissue screening panels: Whole brain

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FIGURE 1B

Docket No.: CL001196 Serial No.: 09/820,003 Inventors: MERKULOV, Gennady et al. Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

- 1 MSSMNPEYDY LFKLLLIGDS GVGKSCLLLR FADDTYTESY ISTIGVDFKI
- 51 RTIELDGKTI KLQIESFNNV KQWLQEIDRY ASENVNKLLV GNKCDLTTKK
- 101 VVDYTTAKEF ADSLGIPFLE TSAKNATNVE QSFMTMAAEI KKRMGPGATA
- 151 GGAEKSNVKI QSTPVKQSGG GCC (SEQ ID NO:2)

FEATURES:

Functional domains and key regions:

[1] PDOC00001 PS00001 ASN_GLYCOSYLATION N-glycosylation site

125-128 NATN (SEQ ID NO:6)

[2] PDOC00005 PS00005 PKC_PHOSPHO_SITE Protein kinase C phosphorylation site

Number of matches: 5

- 1 59-61 TIK
- 2 97-99 TTK
- 3 98-100 TKK
- 4 106-108 TAK
- 5 122-124 SAK
- [3] PDOC00006 PS00006 CK2_PHOSPHO_SITE Casein kinase II phosphorylation site

Number of matches: 3

- 1 35-38 TYTE (SEQ ID NO:7)
- 2 106-109 TAKE (SEQ ID NO:8) 3 127-130 TNVE (SEQ ID NO:9)
- 3 127-130 INVE (SEQ ID NO:9)
- [4] PDOC00007 PS00007 TYR_PHOSPHO_SITE Tyrosine kinase phosphorylation site

30-36 RFADDTY (SEQ ID NO:10)

[5] PDOC00008 PS00008 MYRISTYL N-myristoylation site

Number of matches: 3

- 1 21-26 GVGKSC (SEQ ID NO:11)
- 2 147-152 GATAGG (SEQ ID NO:12)
- 3 152-157 GAEKSN (SEQ ID NO:13)

[6] PDOC00017 PS00017 ATP_GTP_A ATP/GTP-binding site motif A (P-loop)

18-25 GDSGVGKS (SEQ ID NO:14)

[7] PDOC00579 PS00675 SIGMA54_INTERACT_1 Sigma-54 interaction domain ATP-binding region A signature

14-27 LLLIGDSGVGKSCL (SEQ ID NO:15)

FIGURE 2A



Docket No.: CL001196 Serial No.: 09/820,003 Inventors: MERKULOV, Gennady tal. Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

BLAST Alignment to Top Hit:

>CRA|108000024647144 /altid=gi|12728868 /def=ref|XP_002675.2| RAB1, member RAS oncogene family [Homo sapiens] /org=Homo sapiens /taxon=9606 /dataset=nraa /length=222 Length = 222

Score = 372 bits (944), Expect = e-102 Identities = 190/222 (85%), Positives = 190/222 (85%), Gaps = 32/222 (14%) Frame = +3Query: 129 GGCGSKGGGGGGGSCSDMSSMNPEYDYLFKLLLIGDSGVGKSCLLLRFADDTYTESYIST 308 GGCGSKGGGGGGGSCSDMSSMNPEYDYLFKLLLIGDSGVGKSCLLLRFADDTYTESYIST GGCGSKGGGGGGSCSDMSSMNPEYDYLFKLLLIGDSGVGKSCLLLRFADDTYTESYIST 60 Sbjct: 1

Query: 309 IGVDFKIRTIELDGKTIKLQI------ESFNNVK 392 **ESFNNVK** IGVDFKIRTIELDGKTIKLQI Sbjct: 61 IGVDFKIRTIELDGKTIKLQIWDTAGQERFRTITSSYYRGAHGIIVVYDVTDQESFNNVK 120

Query: 393 QWLQEIDRYASENVNKLLVGNKCDLTTKKVVDYTTAKEFADSLGIPFLETSAKNATNVEQ 572 QWLQEIDRYASENVNKLLVGNKCDLTTKKVVDYTTAKEFADSLGIPFLETSAKNATNVEQ

Sbjct: 121 QWLQEIDRYASENVNKLLVGNKCDLTTKKVVDYTTAKEFADSLGIPFLETSAKNATNVEQ 180

Query: 573 SFMTMAAEIKKRMGPGATAGGAEKSNVKIQSTPVKQSGGGCC 698 (SEQ ID NO:5) SFMTMAAEIKKRMGPGATAGGAEKSNVKIQSTPVKQSGGGCC

Sbjct: 181 SFMTMAAEIKKRMGPGATAGGAEKSNVKIQSTPVKQSGGGCC 222 (SEQ ID NO:4)

Hmmer search results (Pfam):

Model	Description	Score	E-value	N
	Ras family	256.4	7.7e-75	2
		170.0	3.9e-47	2
	CE00060 rab_ras_like	9.9	0.39	1
	BRCA2 repeat.		*	1
PF00056	lactate/malate dehydrogenase	3.9	3.4	Τ.

Parsed for domains:

rarbca r						1		score	E-value
Model	Domain	seq-f	seq-t		nmm-I	hmm-t		SCOLE	E-value
PF00056	1/1	13	29		1	18	[.	3.9	3.4
CE00060	1/2	8	64		20	77		86.8	8.9e-23
PF00071	1/2	13	64		1	52	[.	111.9	4.8e-32
PF00634	1/1	57	79		13	35	.]	9.9	0.39
CE00060	2/2	65	140		110	188		81.2	2.9e-21
CECCOO	-, -					100	1	142 4	4.5e-41
PF00071	2/2	65	173	.]	85	198	. }	142.4	4.56-41

FIGURE 2B



Docket No.: CL001196 Serial No.: 09/820,003 Inventors: MERKULOV, Gennady t al. Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

1 TTTTGGGTGT GTGTGTGTGT GTGTGTGTGT GTGCCTTTAC TAGTGACTCA 51 GGTCACAGTT TTCTGAGATT TTTTTTCTCC CCTCAAGACA GAATCTTGCT 101 CTGTCGCCCA GGCTGGAGTG CAGTGGCCTC TCGGCCCACT GTAGCCTCCG 151 CCTCCCGGGT TCAAGCAATT TTCCTGCCTC AGCCTCCCGA GTAGCTGGGA 201 TTACAGGCAC GCGCCACCAT GCCTGGCTAA TTTTTGTATT TTTAGTAGAG 251 ACAGTGTTTC ACCATGTTGG CCAGGCTGGT CTTGAATTCC TGACCTCGTG 301 ATCTGTCCGT TTTGGCCTCT CAAATTCCTG AGATTACAGG CATGAGCCAC 351 CGAGCCTGGC CAGTTTTCTG AGTTTTTATT TGAAATCAAA ATAAGCTTTT 401 TTTTTTTT TAATGGGCTT TAGAGTCCAG GGTAACGAAC ACTTTTTGGT 451 GCCTATTACT GAACCATTCA GGGTATTCCT GGGGTGGTGA CCGTGTTCAT 501 TTCAGAAACC AACATGTTCA TTTCAGAAAC CAAACTCGGG TAACTTTTGA 551 TAAGTTCATC AACTAAGGCC CATGGCAGAA TTTGAGGGCT AAGGGGTGTA 601 ATTAGTGTAT GGGTAGAAAT AAGTGCCTTC TTTCTATATT TTGGCGTTGT 651 AGGAATTTAA AGTGATTCTG CAGTAAGTCT CAGGAGACAA TTTTCTTAGT 701 TCTTAGAAGT TGGAAGATAA ACTTTGGACA ATGTATTACA CTATGCCCTT 751 TGTAATTAAA TAACTCAAGA TAATGTGTTA AAGTTTAGCG GAGATTTAAA 801 TTCCTGAGCT GATTAAAGAG AGCTGTTAAG GCCATAGGTT TTTTAAAAAT 851 GAGTTAATAT TACTCCCAGA AATTGTAGGC ACTATATAGT GATGAATTGC 901 ATATTTTAT TGCTTATTAT TTTCCAGTCT TGCAGAATGG CTCAGGGTTA 951 GTAGCAACTA AAAGATAATA CATTACAATT CAACCTGAAG GCCGGGACGA 1001 AGGTAGGAAT TGGATTTTAG GCTGGCTCTG GGCTGTGTCC CTCCCATCCA 1051 TGGGATGTGG AGCCATTGAA GGTTGTGGGG TCACGATGCA GGTGCTGTCT 1101 CAGAAAGATA CATCCGACTG TGTGTGCAAA TGGGCTGGGG CGGAGAAGAG 1151 AGAGAGAGGT AGAGTCCATT TGGAGACTAC TGCAATAGCC AGGCTGACGA 1201 GTTAAGAGCG GGGCACAGTA AGAATGGGAA GAAATCTAAG AAGAAAATGG 1251 TAGTGCGCGG GGCCAACAAT GGACGATGAC CGAACCCAGG TGGGGATGGG 1301 TGAGTGACGA GAAGAACCGC TCCGTGCCGT CCAGGGAGCC CCTTGACTTC 1351 CCTTCTGTTC TTAGAGCGGA CGTCCTCCTA CCAGCCCCCA ACCAGCGCCA 1401 CCAGGGTGGC GCAAGCCTCA AGCTGGTCAG GTCAGCAACA GCCGCAACGG 1451 AGGCAGGAGC CGACACGCTC GTACCCCGGC CCCCTCCCCG CCCCCGCACC 1501 CCCGGCAGTC CCTCCGGTTT GACCACTCCC CCCGGTCCCT TGCCTCCCCC 1551 GACCCCAGC CTCCGTCGGC CGCCGGCACC ACCCTCCGCC CCTCTCCGCC 1601 CCCTCCCCG TGGGGCGCTG ACTCGCCCGG CTGCCACGTC TCACTGATGA 1651 CATCACTAGG GCAGCTCGGC CTTAGCCAAT CCGCCAGGGG GAGTCCGAGC 1701 GAAGTCCTAG CCAGCGAGTC AGAGGGGAGG GGAGCAGGGA GGGGCCGAGG 1751 GTGGGGAGGT GAGGGAGTGG GGAATGGGGC GGGCGACAAC CCTTCAGGTA 1801 CGCATGCCCC AGAGGCGCGG CGCTTGGCGG GAAGCTGAGT CCTGGCCTTG 1851 CGTCGCACTG TCTGTCCTCA GCTCGCGTAG CCGCGCTCGC GACTCCCTTT 1901 CCCGGCATGC CAGGCGGTGC GGCCGCCCTC TGGGCCGTGT AAAGGCCCCT 1951 CGGTCTAAGG CTTCCCTATT TCCTGGTTCG CCGGCGGCCA TTTTGGGTGG 2001 AAGCGATAGC TGAGTGGCGG CGGCTGCTGA TTGTGTTCTA GGGGACGGAG 2051 TAGGGGAAGA CGTTTGCTCT CCCGGAACAG CCTATCTCAT TCCTTTCTTT 2101 CGATTACCCG TGGCGCGGAG AGTCAGGGCG GCGGCTGCGG CAGCAAGGGC 2151 GGCGGTGGCG GCGGCGGCAG CTGCAGTGAC ATGTCCAGCA TGAATCCCGA 2201 ATAGTGAGTT CAGGAGAGCA CCGGTCGGCT GGGTCCGTGG GCCAGCTTGG 2251 GGGATCTTAA AGGGGTCGAG GAGGGTTGGG GCAGAAGTCG GGGCATCGGC 2301 TGGGGTGAGG CGAGGGTGAT GGGTCAGGAG AGGCTGGCGG CCGGGAGTCG 2351 GGCCCCATTG TCTGACGCGG AGGGGCGGCC GCGCGGGGGA GGGGTCGGGC 2401 CGGAGGGTG AGCCGCCCGG GCCTGGACCG GGTCAGGTTA GAGGGCCTGA 2451 CTGCGGGGCG GGTGCTGAGG AAGCCTGCCG AGGGGCCTGG GGCGGTGTGA 2501 AGGGGTATCT TCTCTCGGAG GCAGTGACTT TTGAAGGAGG ACTTGTCTCT 2551 AAGGGGAGGG GATGGGGTGG GAGAGCCCTT CTAGAGGGCA CTGTCAGACC 2601 CTGCGCCCGC ACTCTGCGGA GCTGTCAGGA TCTTCGGGGT AGAAACCAGC 2651 TTTACTTGTA AATCCTGAGC TTGTTGGGTC TCTCTCCTTC CATCCTCCCC 2701 GCCAGGTTTC AGGTAATATG GATGCTTTTC GGGACTGCGT GGGATTGAGG 2751 GGAATGAGTA GATGGTGAGA AGCAACTGAA CATTTATTAG TTCTCTTTTT 2801 GAGTTGTGTC TTGGAGGAGT TGTTTAAGAG CTCGCCGGGT CCATTGCCCT 2851 CCTATAAAAA CCTGGGCATT TGTGAGAATT TTGTTTTTTT TTTTTTTAAA 2901 GAGGACACCT AAGTCATTTT GTCTTCTGTG GGTCAAGGGA AAAAAAAAA 2951 ACTAAAGCCA AGAAATGTCT TTTTGATACT CGCAGATTAA AGGAAGCTTG

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FIGURE 3A



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3001 CTGTCAAGTT GAAAGAGAAA CGAACGGGAC CTATGATAGA TCTGTATGTA 3101 GAGGTGTCAT GAAAAGTTAA TGCATTTCTT TTTCTTGCTT ACTCAAGAAG 3151 TCACCACGA GAGTATGACA CACCTGGCAC CTTTCCTGG AACTGGTGTT 3101 CACCATCCCT GGATAGAGTT TGTTGGGCTC TCCTCAAGAG CACTTGCATAGA 3251 ATTTCCTCTA CAGTTTACAT GCATGTAAAA TAGAATTAA TTGGAAGAGA 3251 AATCAGTATT TGTTGTAAAA GTGAGTTTA TTTCCTGGTT TGTGGAGGAG 3351 AATCAGTATT TGTTGTAAAA GTGAGTTTAA TTTGCAGGGAGA 3361 CCGAAATTGGT ATTTCCCCTTA AAAGGTCCAC CCACCAGTT AGGCGAGAGA 3361 CTGCATAGACA TTTTCCCCTA AAAGGTCCAC CCACCAGTT AGGCGAGAA 3461 CATATGTGT TCACATGGCT CTTGCAAAAT GCTTACAGAT TTTGTAATAG 3461 CATATGTGT CACATGGCT CTTGCAAAAT GCTTACAGAT TTTGTAATAG 3561 TGGGCTTGA AGCGGAAATC TTTTGCACTA AACAGAACC GTAGTATTTT 3561 ATCAGAATT CATGCTTTAG AAGTTGAGGG TAGTGTTCT GTAGTAATA 3601 TTGCCTGTTT GACCATGTTA AAAAAATTTT TTTTCACAGG CTCCAAGGAC 3551 AAAGTTGGTT TTGCACAGTT GAACGGAGGT GAACTTGAGG TTCTTACTGGA 3561 AAAGTTGAGC CTCTACTGT CAGGAAATTT TCTGAAATTG CTTTAACGG 3761 GTTTATAGAC CTCTACTGT CAGGAAATTT TCTGAAATTG CTTTAACGG 3761 GTTTATTAGG CTACATGTT TTCCCCTTTT GTAAAATAGG ATTATTGGAA 3801 GTTTATTAGT GTAAATAAAT CTTCAAGGT AGATTTAGAGAA 3801 TCATTATTAGT GTAAATAAAT CTTCACAGGT GATTCAGAGAT 3801 TCATTATTAGT CTGCAGGGT GTGGTGAAAT TCAAATGGAA 3801 AGGCATTCTA TTAGTACCAG GATTTAGGAA TTATACGAGA 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TAAATCGAT 4001 AGGCATTCTA TTAGTACCAG GATTCAGGGG GTATCCCATCA TTTTCACAGTG 4001 AGGCATTCTA TTAGTACCAG GATTCCAGG GTATCCCAGTA TTCCAGGACA 4001 AGGCATTCTA TTAGTACCAG GATTCCAGGAG CTCCAAGGAC 4001 AGGCATTCCA TTTCAGGGC GCGGTGGCT CACCTCAGTAA TCCCAGCACT 4101 TTGGGAGGCC GAGGCGGCG GATCCCCAGG TATCCCAGTA TCCCAGCACTC 4101 TTGGGAGGCC GAGGCGGCG GATCCCCAGG TACCCAGGAG AGACCATCC 4101 TGGGAGGACG GCGGGGGCC GACCAGGAG CTCCAGGAGA AGCCACTCC 4101 TCCCACCAC CCCCAGCCAC CTCCAGCCAC CCCCCAGGAA 4001 AATATATTA TTGTTTTGA GACGAGATT CAATCTTCAGGAGA CAGAGACTC 4101 GGCCACTCCA CTCCAGCCC GACGAGAGA CAAGACATC GACCACGCGC 4101 CTCCCACAC CCCCAGCAC CTCCCAGCAC CTCCCAGGCAGA 4001 CATCCCAAG GACCACAC CTCCACCCA CCCCAGAGAA 4001 AATATCTTTA ACATTCCC GAAGAGACAACAACAACAACAACAACAACAACAACAACAA	2001	CDCDC3 3 CDD	annaanann	0011000010	CONTRACTOR CONTRACTOR	monoma mona
101 GACGTGTCAT GAAAAGTTAA TGCATTTCTT TTCTTGCTT ACTCAAGAAG 3151 TCACCACAGA GAATGTGAC ACCCTGGCAC CTTTCCTGGG AACTGGTGTT 3161 CACTTCCCTT GGGTGAGAGTT TGTTGGGCTC TCCTCAAGAG ACCTGGTGTT 3251 ATTCCCCTA CAGTTTACAT GCATGTAAAG TAGTGAATAA TTGGAAGAGA 3251 AATCAGTATT TGTTGTAAAA GTTGAGTTTA TTTGCAGGTT TGGAGGGAA 3351 CACCATGAGT TTCTCCTTTA CAGTGTCAAGA GCCTTTAGAG GATGGGGGAA 3351 CATCAGTATT TGTTGTAAAA GTTGAGTTTA TTTGCTGGTT TAGGTGATATA 3401 CTGCTAGACA TTTTCCCCTA AAAGGTCCAC CCACCAGTTT AGGTGACTAT 3401 CATCATGTGT TACACAGGGCT CTGCAAATA GCTACAGAGT TTTGTAATAG 3501 TGGGCTTGA AGCTGAAATC TTTTCACCTA AAAGAGAACC GTAGTAATTA 351 CATATGTGTT TACACAGGGT CTGCAAATA TTTTTCACAGG TTGTGTAATAG 3501 TTGCTGTTTTA GACCAGTTTAA AAAAAATTTTT TTTTCAAGGG TCCAAGGGA 351 AAAGTTGGTT TTGCACAGTT GAACGGAGGT GAACTTGAGG TCCTAAGGGA 3521 AAAGTTGGTT TTGCACAGTT GAACGGAGGT GAACTTGAGG TCCTAAGGGA 3531 GTTTATTAGAC CTCTACTTT CAGGAAAATT TCTGAGATTT CTTTTAATCAGA 3531 GTTTATTAGAC CTCTACTTT CAGGAAATT TCTCGAATTT 3601 TTCACCAGCT CTCAAATTTT TTTCCCCTTTT GAAAATAGAC 3751 GTTTATTAGAC CTCTACATTT CAGGAAATT TTTTCAGAAGAC 3751 GTTTATTAGAC CTCTACTGTT CAGGAAATT TTTTCACTATT 3801 TCATTATTCC TGTCAGGGTA GTGTGTAAAT AGTTGAGAAC TTTTACAGAG 3751 TGAAAAAACT GTGTGAGCAT TCTTCAGGTG GTATGAGAAC TTTTCACCAGC 3751 TTGAAAAAACT GTGTGAGCAT TCTTCAGGTG GTATGCACA TTTTCACTAAA 401 AGGCATTCTA TTGATCACG GATTTAGGAG GATTATGAGA ATAAATCGAT 401 TGGGAGCC GAGGGGGGC GATTCCCAGGG TACCCAGCACT 4101 TTGGGAGCC GAGGGGGGC GATTCCCAGG TACCCAGCACT 4201 CGGGCGTGGT GGGGCACC CTGTAGTCCA GAGACCATC 4201 CGGGCATGC CTCCAGCCT GACCCCAGC CCCAGCTCA 4201 CGGGCATGC CTCCAGCCT GACCCCAGC CCCAGCTCC 4201 CGGCAATCC CTCCAGCTA TTTTGTATTTT TGGAGAAC CTCCAGCACT 4201 CGGCAATCC CTCCAGCAT CTCTACAGA AGACCATCC 4201 CGGCAATCC CTCCAGCAT CTCTACAGA GAGACCACC 4201 CGGCAATCC CCCGCCAATCT CTCAAAAAA 4501 AAAATTATT ATTGTTTTAG GACCAGGGC CACCCCCCC CCCCAGCTGA 4501 TACCACCAGA TCCCGGC CAGCTGGGC CCCCCCCCCC	3001					
3151 TCACCACCAGC ACTTGGCT CCTTTAAAA 3251 ATTTCCCTT GGGTAGAGT TCTTCAATG CCCTTAAAA 3251 ATTTCCTCTA CAGTTTACAT GCATGTAAAG TAATGAATAA TTGGAAGAGA 3301 CCGAATTGGT ATTCCTTTA AGTGTCAAAG GCCTTTAGAG GATGGAGAT 3451 CATAGGTT AGCTGAAATC CTTGCAAAT TTTGCTCATTA AGCGAGTT AGCTGAAACC TTTTGAAGT TTTTGAAATT 3501 TGTGGTGT CACCTTTAA AACTTGAACC TAGTGTTTTT GTAGGTTTAA AACTTGAACC TAGTGTTTTT GTAGGTTTAA AACAGAGGT GAATTTCAGG CTCCAAGGT 3551 AAGTGGTTT CACGCAGTT GAACGGAGGT GAACTTGAGG CTCTAATTT GTAGTTACT GTAGACAAAAAATTTTT TTTTATACG CTCTAATTTT TTTTCAAGGG CTCTAAAATTT CTTTAATAGAC CTTTAATTCAG CTTTAATTCAGAGAT CTTTAAAATTCAGATAATATTAAAAATTACAAAAAATTACAAAAAATATAGAAAAAATAAAATAAAATAAAAATAAAAATAAAAATAAAAA	3051	GGTTTTGGAT	TACCTGCTTG	GATGCTTGCA	GATAGGGAAT	GAGGTTCCAT
3151 TCACCACCAGC ACTTGGCT CCTTTAAAA 3251 ATTTCCCTT GGGTAGAGT TCTTCAATG CCCTTAAAA 3251 ATTTCCTCTA CAGTTTACAT GCATGTAAAG TAATGAATAA TTGGAAGAGA 3301 CCGAATTGGT ATTCCTTTA AGTGTCAAAG GCCTTTAGAG GATGGAGAT 3451 CATAGGTT AGCTGAAATC CTTGCAAAT TTTGCTCATTA AGCGAGTT AGCTGAAACC TTTTGAAGT TTTTGAAATT 3501 TGTGGTGT CACCTTTAA AACTTGAACC TAGTGTTTTT GTAGGTTTAA AACTTGAACC TAGTGTTTTT GTAGGTTTAA AACAGAGGT GAATTTCAGG CTCCAAGGT 3551 AAGTGGTTT CACGCAGTT GAACGGAGGT GAACTTGAGG CTCTAATTT GTAGTTACT GTAGACAAAAAATTTTT TTTTATACG CTCTAATTTT TTTTCAAGGG CTCTAAAATTT CTTTAATAGAC CTTTAATTCAG CTTTAATTCAGAGAT CTTTAAAATTCAGATAATATTAAAAATTACAAAAAATTACAAAAAATATAGAAAAAATAAAATAAAATAAAAATAAAAATAAAAATAAAAA	3101	GACGTGTCAT	GAAAAGTTAA	TGCATTTCTT	TTTCTTGCTT	ACTCAAGAAG
3251 ATTCCTCTA CAGTTACAT GCATGTARAG TAATGAATAA TTGGAAGGA 3251 ATTCCTCTA CAGTTACAT GCATGTARAG TAATGAATAA TTGGAAGGA 3351 ACCAGATTGAT ATTCCTTTTC AGTGTCAAAG 3351 AATCAGTATT TGTTGTAAAA GTTGAGTTAA TTGCTGGTT TGGTCAATTA 401 CTGCTAGACA TTTCCCCTA AAAGGTCCAC CCACCAGTTT AGCTGACTGT 3451 CATATGTGT TCACATGGCT CTTGCAAAAAT CTTGCTGGTT TGGTCAATTA 3551 ATTAGAATTT CATGGTTTAAAA GTTGAGATTA 3551 ATTAGAATTT TACACTGTATA AAAGGTCAAC 3551 AAAGTTGGTT TGCACAGGT TTTTGCACTA AACAGAAACC GTAGTATTTG 3561 TTGGAGATT TTGGACAGTT AAAAAATTTT TTTTCAGGG TAGGGTAGACA 3651 AAAGTTGGTT TTGGACAGTT GAACGGAGGT GAACTGAGG TTCTTAATTT 3661 GTTTATTAGC CTCTACTGTT CAGGAAATTT TTTTCAGAGG TTTCTTAATTT 3671 AGTTGAGTTTT TTGGAACAAA TAAAGAAACT GAATTTACG CTTTAATTAT 3681 GTTTATTAGC CTCTACTGTT CAGGAAATTT TCTGAAATTTC CTTTAATTAT 3691 GTTTATTAGC CTGAAATAAT CTTCAAAGAT TCTGAAATTAC CTATATCGAG 3751 GTTTATTAGC CTGAAATAAT CTTCAAGATT TCTGAAATTAC CTATATCGAG 3751 GTTTATTAGC CTGAAACAT TCTTCAAGGTT GAAATTAAT TATACAGAG 3751 TGGAAAAACC GTGGAGACT TCTTCAAGGAA TTTAGCACAGAC 3751 TGGAAAAACC GTGGAGACT TCTTCAAGGAA TATAAATCCT CTATATCGAG 3751 TGGAAAAACC GTGGAGACG GCGGTGGCTC ACCTCAACAA TTTACTCAGA 4001 AGGCATTCTA TTAGGCCAGGC GCGGTGGCTC ACCTCAACAA TTTACTCAGA 4010 AGGCATTCTA TTAGGCCAGGC GCGGTGGCTC ACCTCAACAA TATAAATCCT 4010 TTGGGAGCC GGGGGGGGG GATCCCAGGA TCAGGAACC GTCCAGCACC 4151 TCGGAACAC GGTGAAACCC CTCTCTACT AAAAATTCAT GCCCAGGCT 4151 TCGGAACAC GGTGAACCC CTCTCACC AAAAATCCC TCCAGCACT 4151 TCGGAACAC GGTGACCCA GAGGTGGAG CAACACACCC CTCCAGCACT 4151 TCGGAACAC GGTGACCCAG GAACGAGAG CAACACACCC CTCCAGCACT 4151 TCGCACAAT ACCCGCCAG GAGGTGGAG CAACACACCC CTCCAGCACT 4151 CAAGTGATT TATGTTTTGA GACGGAGGGG CAACACACAC CACCCCCC CTCCTGAGAT 4151 CAAGTGATT ATTGTTTTGA GACGGGGTGA CAACACACCC CTCCCGCTAAA 4151 AAAATTATT ATTGTTTTGA GACGGGGTGA CAACACACCC CTCCCGCCACACAC 4151 TACAGCAAT ACCAGCACA AGATTTCCAG AACACCCC CTCCCGCCACAA 4151 CAAGTGATT TACAGGGAT ACCAGGGTGA CAACACACCC CTCCCGCCACACAC 4151 TCGCACACT CCCGCCCATATCT TTTTTTTTTTTTTTT	3151	TCACCACAGC	AGATGTGACA	CACCTGGCAC	CTTTCCTCGG	ΔΔ΄ ΟΤΙΚΟΤΙΚΤΤ
3251 ATTCCCTCTA CAGTTTACAT GCATGTAAAG TAATGAATAA TTGGAAGGA 3301 CCGAATTGGT ATTCCTTTTC AGTGTCAAAG CCCTTGAGG GATGGGGGAA 3301 ATCAGTATT TGTTGTAAAA GTTGATTTA TTTGCTGGTT TGGTCAATTA 3401 CTGCTAGACA TTTTCCCCTA AAAGGTCCAC CACCAGTTT AGCTGACTATA 3451 CATATGTGT TCACATGGCT CTTGCAAAAT GTTACAAGT TTTGTAATAG 3451 ATTAGAATTT CATGCTTTAG AAAGTTCACAA AACAGAAACC GTAGTAATAG 3551 ATTAGAATTT CATGCTTTAG AAATTTAGAGG TAGTGGGACAT 3551 AAAGTTGGTT TTGCACAGTT GAACAGTACTAG TTTCTAAGGG CTCCAAGGAC 3651 AAAGTTGGTT TTGCACAGTT GAACAGGACT GAACTTGAGG CTCCTAAGGAC 3651 AAAGTTGGTT TTGGACAACAA TAAAGAACAT GAATTACTG CTCTATACTAG 3761 GTTTATTAGAC CTCTACTGTT CAGGAAATT TCTTAATTGCG CTCTATACTAG 3761 GTTTATTAGAC CTCTACTGTT CAGGAAATT TCTAAAATTGC GTTTATCAGG 3761 TATTATAGAC CTCTACTGTT TAGGACAAT TAAAAATTTG CTTATATATAT 3701 AGTAGTTTTC TTGCAGGACAT TCTCAAGATT CTCTAAATTGCAG 3851 TACTCAGCCC CTGAATTTTT TTTCCCTTTT GTAAAAATAGG ATAATTGGAG 3851 TATTATTCC TGCAGGACAT TCTCAAGTT AGAAATAGAA 3951 TCATATATCC TGCAGGACAT TCTCAAGTT AGAAATAGAA 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TAAAATGGA ATAATTGGAG 3951 TCATTAGAACAC GTGTGAGCACT TCTTCAGGTG TAACACACTCCTACT AGAAATACAC 4011 TTGGGAGGCC GAGGGGGGG GACCCCGAGG TCACCTCAGTAA TCCAGGACT 4101 TTGGGAGGCC GGTGAACCC CTCTCTACT AAAAATCCAA AAAAATTAGC 4201 CGGCCTGGT GTGGAGCAC TCTCAGCT AAAAATCCAA AAAAATTAGA 4301 GACCACTGCA CTCCAGCCTG GACGACAGG CACCACCGC AGGCCGAGGC 4251 AGGAGAATGG CTGTATCCCG GAACGACGAG CACACTCCG CTCCTAGACAC 4251 AGGAGAATGT CCTCCAGCCTG CACCTCCGG CTCCTAGGAGC 4251 AGGAGAATGT CCTCCAGCCTG CACCTCCGG CTCCTAGGAGC 4251 AGGAGAATGT CCTCCCCCG CACCTCCGG CTCCTAGACAC 4251 AGGAGAATGT CCTCCTCCACC AAAAATCAC 4401 GACTCCAAGA TTTTTTTTTTGA GACCGAGGG AACTTCTGAGA ACCAAGACTC 4401 GACTCCAAGA TATTGTTTTTA ACCAGGATTA TCCAGGCATG 4401 GACTCCAAGA TTTTTTTTTTT ACCAGGATGA AACAAGACACA 4511 ACAACTCCT CCCGCCCAAAT TTTTTTTTTTT TCTCACGG CACCTCCGG CTCCTGGCTTCAGACACACACACACACACACACACACACA						
3301 CCGAATTGGT ATTCCTTTC AGTGTCAAAG GCCTTTGAGG GATGGGGGA 3351 AATCAGTATT TGTTGTAAAA GTTGAGTTTA TTTGCTGGTT TGGTCAATTA 3401 CTGGTGAGCA TTTTCCCCCTA AAAGGGTCCAC CACCAGAGTT AGCTGACTGT 3451 CATATGTGT CACATGGCT CTTGCAAAAT GCTTACAGT TTTGTAATAG 3501 TGTGGCTTGA AGCTGAAACT TTTGCACTA AACAGAAACC GTGTATATTAG 3501 TGTGGGTTGA AGCTGAAACT TTTGCACTA AACAGAAACC GTGAGTATTAG 3501 TGTGGTTTGA CACAGTTTAA AAAAATTTTT TTTCAAGG CTCCAAGGAC 3501 AAAGTTGGTT TTGGACAGTT GAACGGAGGT GACTTGAGG TTCTTAATTAG 3601 TGCTGTGTT TTGGACAGTT GAACGGAGGT GACTTGAGG TTCTTAATTAG 3701 AGTAGTTTCT TTGGAACAAA TAAAGAACAT GGATTTACTG CTTTAATATAG 3751 GTTTATAGAC CTCTACTGTT CAGGAAACTT TCTGAAATTG CTATATATAT 3801 GTTTATTAGC CTGAAATAAT CTTCAAAGAT TCTGAAATTG CTATATATAG 3811 TACTCAGCCT CTGAATTTT TTTCCCTTTT GTAAAAACAC TTTGACAAG 3811 TACTCAGCCT CTGAAGTTT TTTTCCCTTTT GTAAAAAACA TTTGACAAG 3811 TACTCAGCCT CTGAAGTTT TTTTCCCTTTT GTAAAAAACA TTTAAAAAAAAAA						
3351 AATCAGTATT TGTTGTAAAA GTTGAGTTTA TTTGCTGGTT TGGTCAATTA 3401 CTGCTAGAGCA TTTTCCCCTA AAAGGTCCAC CACCAGGTTT AGCTGACTGAS 5501 TGTGGCTTGA AACGTCACTC CTGCCAAAAT GCTTACAAGT 3501 TGTGGCTTGA AACGTCATAC CTGCTAAAAT GCTTACATGAS 3501 TGTGGCTTGA AACGTCAAATC TTTTGCACTA GACAGAAACC GTAGTATTAT 351 AATAGAATTT CATGCTTTAG AAAGTTTGAGG TAGTGTCTT GTAGTGACAT 351 AATGGATTTA GACAGTTAA AAAAATTTTT TTTTCAAAGG CTCCAAAGGAC 3651 AAAGTTGGTT TGCACAGTT GAACGGAGGT GAACTTGAGG CTCCAAAGGAC 3751 GTTTATTAGG TGAAATAAAAT CTTCAAAATT GGATTTACT CTTTAATTAT 3801 TGCTACAGCT CTGAATTTT TTTCCCACTT GTAAAATAG ATTAATAGA 3851 TACTCAGCCT CTGAATTTT TTTCCCCTTT GTAAAATAG ATTAATAGA 3851 TACTCAGCCT CTGAATTTT TTTCCCCTTT GTAAAATAG ATTAATAGA 3801 TCATTATTCC TGTCAGGGTA GTGGTGAAAT TCAAAATGAAT ATAAAAGAAA 3951 TTGAAAAAAC GTGTGAGGAT TCTTCAGGGT GTAAACGAAAT TTAAAAGGAAT 3951 TTGAAAAACT GTGTGAGGAT TCTTCAGGTG GTATGCACA TCCCAGCACT 4101 TGGGGAGCC GAGCCGGGC GATCCCGAGG TCAGGAACT GCGCTTAAGA 4051 AGTTTAGATA TAGGCCAGG GATCCCGAGG TCAGGAACT GCGCTTAAGA 4051 AGGTTAAACA GGGAAACC CGTCCTCACT AAAAATGCA AAAAATTAGC 4201 CGGCGTGGT GGTGAGCCC CGTCCTCACT AAAAATCACA AAAAATTAGA 4251 AAAATTATT ATTGTTTTG GACGGAGTT CAACAAGACTC GTCCAAAAAA 4351 AAAATTATT ATTGTTTTG GACGGAGTT CAACAAGACCC TCCCAAAAAA 4351 AAAATTATT ATTGTTTTG GACGGAGTT CAACAAGACCC TCCCAAAAA 4351 AAAATTATT ATTGTTTTG GACGGAGTT CAACAAGACCC TCCCAAAAA 4351 AAAATTATT ATTGTTTTG GACGGAGTT CAACAAGACCC TCCCAAAAA 4401 GACGACATCC CCCCCCCAAT TTTGTATTTT TCGGAGGAC CACCCCCC CCCCCCCAA 4501 TCCCCAAAA GAGCGAACA GATTCCCGAAGACC TCCTGGGTT AAAAATAGAAT 4501 TGCCACCACT CCCGCCTAAT TTTGAATTTT TCGGAGTA TACAGGCATG 4501 TCCCCAAAA AACATCCCG AAACAAGAGG AAGATCCG TCCTAAAAAAA 4501 TACAGGAATA AACAATCTC TCAAACAAAAATAGC CCCCCCCCCC	3251	ATTTCCTCTA	CAGTTTACAT	GCATGTAAAG	TAATGAATAA	TTGGAAGAGA
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3511 ATTAGAATTT CATGCTTTAG AAGTTGAGGG TAGTGTTCT GTAGTGACAT 3601 TTGCTGTGTT GACAGTTTAA AAAAATTTTT TTTTCAAGGG CTCCAAGGAC 3651 AAAGTTGGTT TTGCACAGTT GAACGAGGG GACTTGAGG TTCTTAATTT 3701 AGTAGTTTC TTGGACAGT GAACGAGGG GACTTGAGG TCTTATATTT 3701 AGTAGTTTC TTGGACAGT CAGGAATTT TTTGAATTG CTTTAATATT 3701 GTTTATAGAC CTCTACTGTT CAGGAATTT TCTGAATTTG CTATATTAT 3701 TATTATAGT GTAAATAAAT CTTCAAAGAAT AGTAGGAAC TTTGACAAGT 3801 GTTTATTAGC CTGAATTTT TTTCCCTTTT GTAAAATAGG ATAATTGGAG 3801 TCATTATTCC TGTCAGGGTA GTGGTGAAAT AGTAGGAAC TTTGACAAGT 3901 TCATTATTCC TGTCAGGGTA GTGGTGAAAT TCTAAAATGGA ATAATTGGAG 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TAAAATGGA TTTCACAGAT 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TATAATCCTT GCGCTTAAGA 4001 AGGCATTCTA TTAGTACCAG GATCCCAGG TAAGCACACCC 4151 TCGGTAACAC GGTGAAACCC CGTCCTTACG ACCTCAGTAA TCCCCAGCACT 4101 TGGGAGGCC GGTGGAACCC CGTCCTTACT TAAAAATGCAA AAAAATTAGC 4201 CGGCGTGGT GGTGGACCC TGTAGTCCCA GCTACCCAG AGCACCACC 4251 AGGAAATGG CGTGATCCCG GAAGGTGGAG CTTGCAGGAA ACCACAGACCTC 4251 AGGACAATG CCTCCAGCCTG GACGACAGAG CTACCCAGGAC 4251 AGGACAATG CCTCCAGCCTG GACGACAGAG CTTGCAGGTA ACCACAGACCTC 4401 CGCCACCTCC CTCCAGCCTG GACGACAGAG CTTGCAGTGA ACCACAGACTC 4401 CGCCACCACT CCCCGCCTAAT TTTGTATTTT TGGTAAGAC GCCCACTCCG CTCCTCAGACA 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTAGACAC GCCCCCCCCCC						
3601 TTGCTGTTT GACAGTTTAA AAAAATTTTT TTTTCAAGGG CTCCAAGGAC 3651 AAAGTTGGTT TTGCACAGTT GAACGAGGGG GACTTGAGG TTCTTAATTT 3701 AGTAGTTTTC TTGGTAACAA TAAAGAACAT GAACTTGAGG TTCTTAATTT 3701 AGTAGTTTTC TTGGTAACAA TAAAGAACAT GAACTTGAGG CTCTAACGGT 3751 GTTTATAGAC CTCTACTGTT CAGGAAATTT TCTGAATTTG CTATATATATT 3801 GTTTATTAGT GTAAATAAAT CTTCACAGATT AGTGAGAAC TTTGACAAGT 3851 TACTCAGCCT CTGAATTTTT TTTCCCTTTT GTAAAATAGG ATAATTGAGA 3851 TACTCAGCCT CTGAATTTTT TTTCCCTTTT GTAAAATAGG ATAATTGAGA 3851 TAGTCAGCCT CTGAATTTTT TTTCCCTTTT GTAAAATAGG ATAATTGAGA 3851 TGAAAAACT GTGTGAGGAT TCTTCAGGTG GTATGCATCA TTTTCATGAA 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TATAATCCTT GCGCTTAAGA 4001 AGGCATTCTA TTAGGCCAGGC GCGGTGGGCT ACCTCAGTAA TCCCAGCACT 4101 TTGGGAGGCC GAGGCGGGCG GATCCCGAGG TCAGGAGATC CCCAGGATC 4101 TTGGGAAGCC GGGGGGCGC GATCCCGAGG TCAGGAGATC GAGACCATC 4101 CGGCGTGGT GGTGGGCACC TGTAGTCCCA GATCCCAGAATCT 4101 GCGCCATGCA CCCCAGCCTG GACGACAGGAC CAAGACTCG TCCCAGAAATCT 4301 GGCCACTACC CCCCAGCCTG GACGACAGGA CAAGACTCG TCCCAGCACA 4301 GAGGAAATG CCCCAGCCTG GACGACAGGA CAAGACTCG TCCCAGGAT 4401 GAGTGCAAT CCCCGCCTAAT TTTGTATTTT TGGTAGAGAC CGCCCCCCC CCCCCCCCAGCTCACA 4501 TGCCACCACC CCCGCCTAAT TTTGTATTTT TGGTAGAGAC CGCCCCCCC CCCCCCCCC 4501 TGCCACCACC CCCGCCTAAT TTTGTATTTT TGGTAGAGAC CGCCCCCCCC CCCGCCTCAC 4501 TGCCACCACC CCCGCCTAAT TTTGTATTTT TGGTAGAGAC CCCGCCCCCC 4501 TGCCACCACCAC CCCGCCTAAT TTTGTATTTT TGGTAGAGAC CGCGCCTCCAG 4601 CTTCCCAAG TGTTGGAAA TACCAGTAGA TATACAGCAAA TCCCAGACACAC 4501 TACCACACAC AGACTCCCG AAACTCCCG CCCCCCCCCC	3501	TGTGGCTTGA	AGCTGAAATC	TTTTGCACTA	AACAGAAACC	GTAGTATTTT
3651 AAAGTTGGTT TTGCACAGTT GAACGAGGT GAACTTGAGG TTCTTAATTT 3701 AGTACTTTTC TTGGTAACAA TAAAGAACAT GGATTTACTG CTTTAATGAG 3751 GTTATATGAC CTCTACTGTT CAGGAAATT TCTGAATTTG CTAAATATAT 3801 GTTTATTAGT GTAAATAAAT CTTCAAGATT AGTTGAAATTG CTAAATATAT 3801 TCATTATTCC TGGAATTTT TTTCCCTTTT GTAAAATGG ATAAATGGA 3851 TACTCAGCCT CTGAATTTTT TTTCCCTTTT GTAAAATGG ATAAATGGAG 3951 TCGATAATCC TGTCAGGGTA GTGGTGAAAT TCAAATGGAA ATAAAAGAAT 3951 TTGAAAAACT GTGTGAGCAT TCTCAGGTG GTATGCATCA TTTTCATGAG 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TATAAACGAT ACCACCT 4101 TTGGGAGGCC GAGCCAGGC GATCCCGAGG TCAGGAAGATC GAGACCATCC 4151 TCGGAACACC GGTGAAACCC CGTCTCACT AAAAATGCAA AAAAATTAGC 4201 CGGCGTGGT GTGGGCACC TGTAGTCCA GCTACTCAGAA 4201 CGGCACTCCA CTCCAGCCTC GACGACGACT 4211 AGGCAATCC CTCCAGCCTC GACGACGACT 4221 AGGCAATCC CTCCAGCCTC GACGACGACC 4221 AGGCAATCC CTCCAGCCTC GACGACACCACCACCACCACCACCACCACCACCACCACCA	3551	ATTAGAATTT	CATGCTTTAG	AAGTTGAGGG	TAGTGTTCTT	GTAGTGACAT
3651 AAAGTTGGTT TTGCACAGTT GAACGAGGT GAACTTGAGG TTCTTAATTT 3701 AGTACTTTTC TTGGTAACAA TAAAGAACAT GGATTTACTG CTTTAATGAG 3751 GTTATATGAC CTCTACTGTT CAGGAAATT TCTGAATTTG CTAAATATAT 3801 GTTTATTAGT GTAAATAAAT CTTCAAGATT AGTTGAAATTG CTAAATATAT 3801 TCATTATTCC TGGAATTTT TTTCCCTTTT GTAAAATGG ATAAATGGA 3851 TACTCAGCCT CTGAATTTTT TTTCCCTTTT GTAAAATGG ATAAATGGAG 3951 TCGATAATCC TGTCAGGGTA GTGGTGAAAT TCAAATGGAA ATAAAAGAAT 3951 TTGAAAAACT GTGTGAGCAT TCTCAGGTG GTATGCATCA TTTTCATGAG 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TATAAACGAT ACCACCT 4101 TTGGGAGGCC GAGCCAGGC GATCCCGAGG TCAGGAAGATC GAGACCATCC 4151 TCGGAACACC GGTGAAACCC CGTCTCACT AAAAATGCAA AAAAATTAGC 4201 CGGCGTGGT GTGGGCACC TGTAGTCCA GCTACTCAGAA 4201 CGGCACTCCA CTCCAGCCTC GACGACGACT 4211 AGGCAATCC CTCCAGCCTC GACGACGACT 4221 AGGCAATCC CTCCAGCCTC GACGACGACC 4221 AGGCAATCC CTCCAGCCTC GACGACACCACCACCACCACCACCACCACCACCACCACCA	3601	ТТССТСТСТТ	GACAGTTTAA	ΤΡΥΤΡΥΔΑΔΑΔ	ΤΤΤΤΟΔΑΙΚΙΚ	CTCCAAGGAC
3751 AGTAGTTTC TTGGTAACAA TAAAGAACAT GGATTTACTG CTTTATCGAG 3751 GTTTATAGAC CTCTACTGTT CAGGAAATTT TCTGAAATTG CTATATATATA 3801 GTTTATAGAC GTAAATAAAAT CTTCAAGATT AGTTGAGAAC TTTGACAAGT 3851 TACTCAGCCT CTGAATTTT TTTCCCTTTT GTAAAATAGG ATAATTGGAG 3891 TCATTATTCC TGCAAGGGTA GTGGTGAAAT TCAAAATAGG ATAATTGGAG 3991 TCATTATTCC TGTCAGGGTA GTGGTGAAAT TCAAAATAGTA ATAAAAGAAT 4001 AGGCATTCTA TTAGGACAT TCTCAGGTG GTATACACTA TTTACTAGAA 4001 AGGCATTCTA TTAGGACCAG GATTCTGAGGAA TCCAAGTACA TTTTCATGAA 4001 AGGCATTCTA TTAGGACCAG GATTCTGAGGAA TCCAAGGACTC 4101 TTGGGAGGGC GAGGCGGGC GAGGCGGGC GAGGCGGCG 4101 TTGGGAAGGC GAGGCGGCG GAGGCGGCG 4101 TTGGGAAGGC GGTGAACCC CGTCTCACT AAAAATGCAA AAAAATTGCAA 4101 TGGGAGGCC GTGGATCCC GGAGGTGGACC CGTCACTCACGAAAAAAAAGCAA AAAAATTGCAA 4101 GGCCACTGCA CTCCAGCCTG GACGACGAGG CTAGCAGGA ACCAAGATCT 4251 AGAAATAATT ATTGTTTTTGA GACGGAGTT CAATCTTGTT GCCCAAGATCT 4401 GAGTGCAATC CCCGGCTG GACGACAGAG CAAGACTCCG CTCCTAGGAT 4401 GAGTGCAATC CCCGGCTG GACGACAGAG CAAGACTCCG CTCCTAGGAT 4401 GAGTGCAATC CCCGGCTAAT TTTGTATTTT TGGTAGGACC CTCCTCGGCTG 4451 CAAGTGGATC CCCGGGCTAAT TTTGTATTTT TGGTAGGACC CCCGCCCCAG 4601 CTCCCAAGA TACCACCAA AGATTCCCA AAGTTGGAT TCCAGGCATG 4601 TGCCACCACT CCCGGGCTAAT TTTGTATTTT TGGTAGAGAC GCGGCTCAG 4601 TGCCACCACT CCCGGGCTAAT TTTGTATTTT TGGTAGAGAC CCCGCCCCAG 4601 TGCCACCACT CCCGGGCTAAT TTTGTATTTT TGGTAGAGAC CCCGCCCCAGAA 4601 TGCCACCACT CCCGGGCTAAT TTTGTATTTT TTTTTTAGAGAC GGGATTTCC 4551 GCAATCTGGA CTTTTGGAAG CTTTATAGAA GACGACCAC CCCGCCCCAGAAA 4751 GCAACCACAT AGATTTCAAA TACCAGTAGA TATAGCAAAT TCCAAGATT 4761 GGCAAGGAAA AGAATTCACC TTTCTTTTGA AGACAGACA AAAAGCATTT 4771 TTACAAACCC GAAACCATT TTTTATTTTT TCTGGAACA TACCAGTAGA ATTACCAGGAA 4861 AGAATTTAAA AACATTTCC TATATTATAAA GACAAATAAA AACATTTCAAG 4951 ATCAAACCCA GAAACCATTT TATATTTTT TCTGGAACA CTTAAACAAG 4951 ATCAAACCAC GAAACCATTT TATATTTTT TCTGGAACA GAATACAAG 4951 ATCAAACAATA AGATTTTAAT TATATTTTT TCTGGAACA TATAACAAGGA ATTACAAGGA 4951 ATCAAACCACA TATACTTCC TATAACAAG CTCATATAAAA 4901 AATACGGTG CAAATCTTC TATAACAAT TATATTTTT TTTTTTTTT						
3751 GTTTATAGAC CTCTACTGTT CAGGAAATTT TCTGAATTTG CTATATATAT 3801 GTTTATTAGT GTAAATAAAT CTTCAAGATT 3801 TACTCAGCCT CTGAATTTT TTTCCCTTTT GTAAAATAGA ATAATTGAGA 3901 TCATTATTCC TGTCAGGGTA GTGGTGAAAT TCAAATGTAT ATAAAAGAAT 3951 TGAAAAACC GTGTGAGCAT TCTTCAGGTG GTATGCATCA TTTCATGAA 4001 AGCCATTCTA TTAGTACCAG GATTAGGAA TATAATCCTT GCGCTTAGAA 4001 AGCCATTCAA TAGGCCAGGC GCGGTGGCTC ACCTCAGTAA TCCCAGCACT 4101 TTGGGAGGCC GAGGCGGCG GATCCCGAGG TCAGGAACT CCCGGCACT 4101 TTGGGAAACC GGTGAAACCC CGTCTCTACT AAAAATGAAA TACCCAGCACT 4101 GGCCACTGCA CTCCAGCCT GAGGACAC GCTACTCCGA AGGCTAGGC 4251 AGGAGAATG CCGGGCACC TGTAGTCCCA GCTACTCGAG ACCAAGAACTC 4201 CGGCCATGCA CTCCAGCCTG GACGGCAGG CTTGCAGTAA ACCAAGATCT 4301 GGCCACTGCA CTCCAGCCTG GACGGCAGG CTTGCAGTGA ACCAAGATCT 4301 GGCCACTGCA CTCCAGCCTG GACGGCAGG CTTGCAGTGA ACCAAGATCT 4301 GGCCACTGCA CTCCAGCCTG GACGACAGG CTTGCAGTGA ACCAAGATCT 4401 GAGTGCAATC TCCTGCCTCA GATCCCCG AAGACTCCG CTCCTGGGTT 4451 CAAGTGATTC TCCTGCCTCA GATCCCCGA CACCTCCGC CTCCTGGGTT 4551 CATGTTGGT CGCGCAATCT TTTGTATTTT TGGTAAGAGA GGGTTTCC 4551 CATGTTGGA GAGGCGGACA AGATCCCCG AAGTCTCCC CCCCGCCAGAA 4551 TAGATTTTAT ACATGTCAAA TACCAGGAGA AGATCGC CCCGCCCCAG 4661 CTTCCCAAAA TTTTGGAAGA CTTTATATATT TGGTAGAGAC GGGATTTCC 4751 TGCACCACAT ACATGCCAA ACATCCCG AAGTCTCC CCCGCCCCAGAA 4701 TGCCACCAAC ACTTTGGAAGA CTTTATAGAA TACAGGACAT TTTCAGGAACA AGATTTCAGG GCCACCCGC CCCGCCCCAGAA 4701 TGCACCAAAA TACCAGAACA AGATTTCAGG GCCACCCGC CCCGCCCCAGAA 4701 TGCACCAAAA TACAAGCCAA AGATTTCAGG GCCACCCGC CCCGCCCAGAA 4701 TGCAACACAA AGATCATCC TTTTATAGAA GACAAAGAACA GAAACAATCATCC TTTTATAGAA GACAAAGAACA AAAACAAAA AAAAATTATT TATTATTTTT TCAGGATCA AAAACACAA GAAACAATCATCC TTTTATTATA ACAACCAA GAAACAATTTT TATTATTTTT TTTTTTTAAAAACT AAAAACACA GAAACAATTTT TATTATTTTT TTTTTTTAAAAACT AAAAAATTAATT						
3861 GTTTATTAGT GTAAATAAAT CTTCAAGATT AGTTGAGAAC TTTGACAAGT 3851 TACTCAGCCT CTGAAATTATT TTTCCCTTTT GTAAAATAGA ATAATAGAGA 3951 TCATTATTCC TGTCAGGGTA GTGGTGAAAT TCAAATGTAA ATAAAAAGAAT 3951 TTGAAAAACT GTGTGAGCAT TCTTCAGGTG GTATGCATCA TTTTCATGAA 4051 AGTTTAGATA TAGGCCAGGC GGGTGGCTC ACCTCAGTAA TCCAAGCACT 4051 AGTTTAGATA TAGGCCAGGC GGGTGGCTC ACCTCAGTAA TCCAAGCACT 4101 TTGGGAGGCC GGGGGGGGG GATCCCAGGAG TCAGGAGATC GAGACCACCC 4151 TCGGTAACAC GGTGAAACCC CGTCTCTACT AAAAATGCAA AAAAATTAGC 4201 CGGGCGTGGT GGTGGGCACC TGTAGGAGACC GGTGCTCAAGAACCC 4251 AGGAGATGG CGTGGACCC GGAGCGGGGG CTGCAGGAGACCAC TCCAGCACTC 4301 GGCCACTGCA CTCCAGCCCT GACGACAGAG CTACCAGGA ACCAAGACTC 4401 GAGTGCAATG CCTCAGCCCT GACGACAGAG CTGCAGGAG ACCAAGACTC 4401 GAGTGCAATG CCCCGGCAAATCC CCCCCCCC CTCCTGGGT 4401 GAGTGCAATG TCCTGCCCCA GATCCCGG CAAGCCTCGC CTCCTGGGT 4401 GAGTGCAATG TCCTGCCCCA GATCCCCGC CCACCTCCG CTCCTGGGTT 4401 GAGTGCAATG TCCTGCCCCA GATCCCCGA CACTCCCGC CTCCTGGGTT 4401 GAGTGCAATG TCCTGCCCCA GATCCCCGA CACTCCCCC CCCCCCCTCGTGTT 4551 CATGTTGGTC AGGCTGCTC CAAACTCCCG AACTGGAGA TCACAGCAGT 4561 TAGATTTTAT ACATGTCAAA TACCAGTAGA TACCAGCAGA 4651 TAGATTTTAT ACATGTCAAA TACCAGTAGA TATAGCAAAT TCCAGGAGTAG 4651 TAGATTTTAT ACATGTCAAA TACCAGTAGA TATAGCAAAT TCCAGAGATG 4751 GCTATCGGG TTTTGGAAGA CTTTATAGAA 4761 GCTATCGG TTTTGGAAGA CTTTATAGAA 4861 ATCAAGCCAT ACAGTCTC TCTTCACG GGGATGTGG GTTGGTTG 4771 GCAACCCA GAACCACC CCCGCCCAGC 4771 GCAACCCA CAACTCCC TCTTATAGAA GACAGACCT AAAGGGATT 4761 GCAATCTTA ACATCTCTC TTTTTTTTAGAA GACAGACCT AAAGGGATT 4771 GCAACCCA GAACCACTC TTTTTTTTTAGAA GACAGAACA CTCAATAGTA 4771 GCAACCCA CAAATCATCC TTTTTTTTTAGAA GACAGAACAT TCCAGAGGA 4851 ATCAAACCA GAACCATTTTT TATATTTTT TCTGGGATCA AAATACATGG 4851 ATCAAACCA GAACCATTTTT TATATTTTT TCTGGGATCA AAATACATGG 501 TATCTGGCCT ACTATATTT TATATTTTT TCTGGGATCA AAATACATCG 501 TATCTGGCCT ACATATTTT TATATTTTT TCTGGGATCA AATACATCAG 501 TATACAGTC TCCAAACC CAAATCATC TTTTTTTTTT		AGTAGTTTTC			GGATTTACTG	CTTTATCGAG
3851 TACTCAGCCT CTGAATTTT TTTCCCTTTT GTAAAATAGG ATAATTGAG 3901 TCATTATTCC TGTCAGGGTA GTGGTGAAAAT TCAAAATGTAT ATAAAAGAAT 3901 TTGAAAAACT GTGTGAGCAT TCTTCAGGTG GTATGCATCA TTTCATGAA 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TATAATCCTT GCGCTTAAGA 4051 AGTTTAGATA TAGGCCAGGC GCGGTGGCTC ACCTCAGTAA TCCCAGCACT 4101 TTGGGAGGCC GGGGGGGG GATCCCGAGG TCAGGAGATC GAGACCATCC 4101 CGGGCGTGGT GGTGGGCACC CGTCTCTACT AAAAATGCAA AAAAATTAGC 4201 CGGGCGTGGT GGTGGGCACC TGTAGTCCCA GCTACTCGAG AGGCTGAGGC 4251 AGGAGAATGG CTCCAGCCTG GACGACCAGA CAACTCCGAG CTCCAGCACT 4301 GGCCACTGCA CTCCAGCCTG GACGACAGAA CAACTCTG TCTCAAAAA 4311 AAAATTATTT ATTGTTTTTGA GACGGAGAGA CAACTCCG TCTCAACAA 4311 AAAATTATTA ATTGTTTTTGA GACGGAGAAC CAACTCCGC CTCCCGGCTG 4401 GAGTGCAATG CCCGGCTAAT TTTGTATTTT TGGTAGAGAC GGGGTTCTC 4451 CAAGTGATC CCCGGCTAAT TTTGTATTTT TGGTAGAGAC GGGGTTCTC 4551 CATGTTGGTC CCCGGCTAAT TTTGTATTTT TTGGTAGAGAC GCGGCTCAG 4601 CTCCCAAAG TGTTGGGATT ACAGGCGTGA GCCACCCGCC CCCGCCCAG 4601 CTCCCCAAAG TGTTGGAACA ACAACTCCCG AAGTGATCCG CCCGCCCCAG 4601 CTCCCCAAAG TGTTGGAACA ACAACTCCCG AAGTGATCCG CCCGCCCCAG 4601 CTCCCCAAAG TGTTGGAACA ACAACTCCCG AAGTGATCCG CCCGCCCCAG 4601 CTCCCCAAAG TGTTGGAACA ACATTCAAG GGCAGCACG CCCGCCCCAG 4601 CTCCCCAAAG TGTTGGAACA CATTCAGG GGCATGGTGG GTTGTGGTT 4701 TGGCATGGAT ACAACTCAAA TACCAGTAGA TATAACCAATG AAATTTTAAAAAAAAAA	3751	GTTTATAGAC	CTCTACTGTT	CAGGAAATTT	TCTGAATTTG	CTATATATAT
3901 TCATTATTCC TGTCAGGGTA GTGGTGAAAT TCAAATGTAT ATAAAGAAT 3951 TTGAAAAACT GTGTGAGCAT TCTTCAGGTG GTATGCATCA TTTTCATGAA 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TATAATCCTT GCGCTTAAGA 4051 AGTTTAGATA TAGGCCAGCC GCGGTGGCTC ACCTCAGTAA TCCCAGCACT 4101 TTGGGAGGCC GAGCGGGCG GATCCCGAGG TCAGGAGATC GAGACCACC 4151 TCGGTAAACA GGTGAAACCC CGTCTCTACT AAAAATGCAA AAAAATTAGC 4201 CGGCGTGGGT GGTGGGCACC TGTAGTCAC ACAACACCG AGGCTGAGGC 4251 AGGAGAATGG CGTGATCCCG GAGGACGAGG CTTGCAGTGA AGCCAAGACTC 4301 GGCCACTGCA CTCCAGCCTG GACGACAGAG CACACTCCG TCTCAAAAAA 4351 AAAATTATT ATTGTTTTGA GACGGAGTTT CAATCTTGTT GCCCAGGCTG 4401 GAGTGCAATG GCGCAAATCT CCTCTCACCG CAACCTCCGC CTCCTGGGTT 4451 CAAGTGATTC TCCTGCCTCA GATTCCCAGC CAACCTCCGC CTCCTGGGTT 4451 CAAGTGATTC TCCTGCCTCA GATTCCCCAG AAGTTGGAT 4551 CATGTTGGTC AGGCTGATT TTTGTATTTT TGGTAGAGAC GGGGTTTCTC 4551 CATGTTGTC AGGCTGGTCT CAAACTCCCC AAGTGATCCG CCCGCCTCAG 4601 CTTCCCAAAG TGTTGGGATT ACAGGCGTGA GCCACCCCCC CCGCCTCAG 4601 CTTCCCAAAA TACCTCAAA TACCAGTAGA TATAGCAAAT TCCAGATGTG 4751 GCTATCTGGG TTTTGGAAGA CTTTATAGAA GAGAGACCCG CCGGCTCAG 4861 ATCAACCAAT AGATTTGGAAG ACATTTCAGG GGGATGGTGG TTTTGGAAGA 48701 TGGCATGGAT AGACCAACC TTTTTGAAACCAA AGATTTCAAG 4881 GGGGAAAGAA AGAGCAACCA AGATTTCAGG GGGATGGTGG TTTTGGAAGA CTTTATAGAA GAGAGACCTG AAAGGGTTT 4891 AATACCGGTGT ACAACCACC TCAAACCACA GAAACCATCA TTTTATAGAA GAGAGACCTG AAAGGGTTT 4891 ATCAACCAC GAAACCATT TTTATTTTT TCTGGGATCA CTCAAAGGA 4891 ATCAACCAC GAAACCATT TTTATTTTT TCTGGGATCA CTCAAAGGA 4891 ATCAAACCAC GAAACCATTT TATTATTTTT TCTGGGATCA CTCAAAGGA 4891 AATACAGGTGT CAAATCATCC TTTTTTTTGA AGACCAACA GATTTCAAGA 4891 AATACAGGTGT CAAATCATCC TTTTTTTTGA AGACCAACA CTCAAAGGA 4891 AATACAGGGTA TTTTATATTTT TCTGGGATCA AATACATGG 5001 TATCTGGCT ACATATTTC TATTATTTT TCTTGGGATCA CTCAAAGGA 4891 AATACAGGTT TTTTATTTT TCTTTTTTTTTTTTTTTT	3801	GTTTATTAGT	GTAAATAAAT	CTTCAAGATT	AGTTGAGAAC	TTTGACAAGT
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3951 TTGAAAAACT GTGTGAGCAT TCTTCAGGTG GTATGCATCA TTTTCATGAA 4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TATAATCCTT GGGCTTAAGA 4001 AGGCATTCTA TAGGCCAGGC GAGTGGCTC ACCTCAGTAA TCCCAGCACT 4101 TTGGGAGGCC GAGGGGGGG GATCCCGAGGA TCAGAGAGATC GAGACCATCC 4151 TCGGTAACAC GGTGAAACCC CGTCTCTACT AAAAATGCAA AAAAATTAGC 4201 CGGGCGTGGT GGTGACCCC GGAGGTGGAG CTTGCAGTGA ACCAGAGTCT 4251 AGGAGAATGG CGTGATCCCG GGAGGTGGAG CTTGCAGTGA ACCAGAGTCT 4301 GGCCACTGCA CTCCAGCCTG GACGACAGAG CAAGACTCCG TCTCAAAAAA 4351 AAAATTATT ATTGTTTTGA GACGACAGAG CAAGACTCCG TCCCAGGCTG 4401 GAGTGCAATC TCCTGCCTCA GATCCCCG CACCTCCCC CTCCTGAGTT 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTTAGGAA TACAGGCATG 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTTAGGAC GGGGTTTCT 4501 TGCCACCACAT CCCGGCTAAT TTTGTATTTT TGGTTAGGAC GGGGTTTCT 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTTAGAGAC GGGGTTTCT 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTTAGAGAC GGGGTTTCT 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTTAGAGAC GGGGTTTCT 4501 TGCCACCACT CCCGGCTAAT TTTTGTATTTT TGGTTAGAGAC GGGGTTTCT 4501 TACAGCAAAT ACATGTCAAA TACCAGTAGA TATAGCAAAT TCCAGATGTG 4701 TGGCATCGGG TTTTGGAAGA CTTTATAGAA GACAGACCC CCGGCCCACA 4801 ATCAGCAATT AGATTTGGAG GAACCAGAGG GGGATGGTGG GTTGTGGTTG 4801 ATCAGCAATT AGATTTGGAG GAACCAGAGG AGTGACTAGG AATTTCAAG 4801 AATACGGTGT CAAATCATC TTTCTTTTAGAA GAGCACACAG GTAATAAGA 4801 AATACGGTGT CAAATCATC TTTCTTTTTAA AGACTAAGA AAACATTTT 4801 AATACGGTGT CAAATCATC TTTCTTTTTTTT TCTGGGATCA AATACATGGG 481 ATCAGACCAA AAACAGTTT TATATTTTT TCTGGGATCA AATACATGGG 481 ATCAGACAAT AGATTTTCAAGA GACCAGAGG GTCACAAGG CAATACAAGG 481 ATCAGACAATA TTCTTAGAGA TTTCTTTTTTT TCTTGGGATCA AATACATGGG 501 TATCTGGCCT ACTATATTTG AATACATC TTTCTTTTTT TTTTAGTAAA AATACATGG 501 TATCTGGCCT ACTATATTTT ATTAGGAGAC TTTCTTTTTTT TTTTAGTAAAATTCAG 501 TATCTGGCT TTTTAGAACTC TTTCTTTTTTTTTTTTT						
4001 AGGCATTCTA TTAGTACCAG GATTTAGGAA TATAATCCTT GCGCTTAAGA 4051 AGTTTAGATA TAGGCCAGGC GCGGTGGCTC ACCTCAGTAA TCCCAGCACT 4101 TTGGGAGGC GAGGCGGCG GATCCCGAGG TCAGGAGATC GAGACCACC 4101 TTGGGAGGC GGGGGACC CGTCTCTACT AAAAATGCAA AAAAATTAGC 4201 CGGGCGTGGT GGTGGACCC CGTCTCTACT AAAAATGCAA AAAAATTAGC 4201 CGGGCGTGGT GGTGGGCACC TGTAGTCCCA GCTACTCGAG AGGCTGAGGC 4251 AGGAGAATGG CGTGATCCCG GAGACAGAG CTTGCAGTGA ACCAAGATCT 4301 GGCCACTGCA CTCCAGCCTG GACGACAGAG CAAGACTCCG TCTCAAAAAA 4351 AAAATTATT ATTGTTTTGA GACGGAGTT CAATCTTGTT GCCCAGGCTG 4401 GAGTGCAATG GCGCAAATCT CCTCTCACCG CCACCTCCCC CTCCTGGGTT 4451 CAAGTGATC TCCTGCCTCA GATTCCCCAG AAGTTGGGAT TACAGGCATG 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTAGAGAC GGGGTTTCTC 4551 CATGTTGGTC AGGCTGGTCT CAAACTCCCC AAGTGATCCG CCCGCCTCAG 4601 CTTCCCAAAG TGTTGGGATT ACAGGCGTGA GCCACCGCCC CCGGCTCAG 4601 CTTCCCAAAG TGTTTGGAAGA CAATCTCCCG GAGACACC CCCGCCTCAG 4701 TGGCATGGAT AGATTTCAGAG GGGATTGTGG GTTGTGGTTG 4751 GCTATCTGGG TTTTGGAAGA CATTTATAGAA GAGAGCACCA AAAGGGATTT 4761 TGGCATGGAT AGATTTCGAG GGAACAGAGG GGATGGTGG GTTGTGGTTG 4751 GCTATCTGGG TTTTTGGAAGA CTTTATAGAA GAGAGACCCC AAAGGGATT 4761 TACAGCCAATT AGATTTCGAG GAACAGAGGG AGTGACTAGG AATTTTCAAG 4861 ATCAGCAATT AGATTTGGAG GAACAGAGGG AGTGACTAGG AATTTTCAAG 4871 ATCAGCCAAT AGAATCACC TTTCTTTTGA GACCAGGGC CCCCCACAAGGG 4871 ATCAGCCAAT AGAATCACC TTTCTTTTTGA GACCAGGG AATACATGGG 4871 ATCAGCCAAT AGAATCACC TTTCTTTTTGA GACCAGGG CACGGCC 4951 ATCAGACAGTT TATATTTT TATATTTTT TCTGGGATCA AATACATGG 5001 TATCTGGCCT ACAATATTTT TATATTTTT TCTGGGATCA AATACATGG 5011 TATCTGGCCT ACATATTTT TATATTTTT TCTGTGGAGA AATACATGG 5011 GAGGAAGGA GGAACAGTTT TATATTTTT TCTTGTGAAA AATACATCGG 5011 TATCTGGCCT ACATATTTT TATATTTTT TCTTGTGAAA AATACATCGG 5011 TATCTGGCCT TATATTTT TATATTTT TTTTTTTTTT						
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4351 AAAATTATTT ATTGTTTTGA GACGGAGTTT CAATCTTGTT GCCCAGGCTG 4401 GAGTGCAATG GCGCAAATCT CCTCTCACCG CACCTCCGC CTCCTGGGTT 4451 CAAGTGATTC TCCTGCCTCA GATTCCCGAG AAGTTGGGAT TACAGGCATG 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTAGAGAC GCGTTTCTC 4501 CATCTCCAAAA TGTTGGGAT ACAGGCGTGA CCCCCCCCAG 4601 CTTCCCAAAA TGTTGGGAT ACAGGCGTGA GCCACCGCGC CCGGCCTAAA 4651 TAGATTTAT ACATGTCAAA TACCAGTAGA GCGATGGTGC CCGGCCTCAG 4601 CTTCCCAAAA TGTTGGAAA TACCAGTAGA TATAGCAAAT TCCAGATGTG 4701 TGGCATGGAT GAGAGCAACA AGATTTCAGG GGGATGGTGG GTTGTGGTTG 4701 TGGCATGGAT GAGAGCAACA AGATTTCAGG GGGATGGTGG GTTGTGGTTG 4701 TGGCACCATT AGATTTGGAAGA CTTTATAGAA GAGAGACCTG AAAGGGATT 4701 TGGCATGGAT GAGAGCAACA AGATTTCAGG GGGATGATGA AATCAGTCTG 4701 TACCAGCAATT AGATTTGGAAGA CTTTATAGAA GAGAGACCTG AAAGGGATT 4801 AATACCGGTGT CAAAATCATCC TTTCTTTTGA AGACAGGACA GTAATAAGTA 4801 AATACCGGTGT CAAAATCATCC TTTCTTTTGA AGACAGGACA GTAATAAGTA 4901 AATACCGGTGT CAAAATCATCC TTTCTTTTTGA AGACAGGACA GTAATAAGTA 4901 AATACCGGTGT CAAAATCATCC TTTCTTTTTT TCTGGGATCA AATCAATGGG 4951 ATCAAACCCA GAAACAGTTT TATATATTTT TCTGGGATCA AATCAATGGG 5001 TATCTGGCCT ACTATATTTG TATTCTTAGAC TGTTTAGTAA AATCAAGGG 5010 GAGGAAGTAA GACACTTTC AAAAGGGAG GTCACAAGGG CATGAGACAA 5101 GAGGAATATTTT AGTAAACTG ATTTTATAACAGG TTCTTTTTTTT TTTAATGAGA 5101 CTTGTTATCT TTATAAAAAGT AATTAGCAAA AATTTGGAAA AATTAGAAG 5201 CTTGTTATCT TTATAAAAAGT AATTAGCAAA AATTTGGAAA AATTAGAAG 5201 CTTGTTATCT TTATAAAAAGT AATTAGCAAA AATTTGGAAA AATTAGAAG 5351 CTTTAACATCT TGTTCCAAAC TCCAAAGTCT TGCTTTCTT TCAATTAAAA 5351 CTTTAACATCT TGTTCCAAAC TCCAAAGTCT TGCTTTCTT TCAATTAAAA 5401 AACAATGGTA TATTAGCTAA TGTTTACATA TTTAATAAAA 5501 ATAATCTTTG GTTTATCATT ACCAAATTAT ATTGGTTTA TTTAATAAAA 5510 CTTGAAAAAAA GATTCTGAAG CAACAAATT TGGTATAAT ATTGGTTTA 5501 ATAATCTTTG GTTTATCATT ACCAAATTAT TTTAATATTA TATTGGTTTA 5501 ATAATCTTTG GTTTATCTT TCTGCTCTG TGCTTAAATT TTTAATATTA TATTGGTTTA 5501 ATAATCTTTG GTTTATCTT TTTTTTTT TTTTTTTTT TTTTTTTTTT	4251	AGGAGAATGG	CGTGATCCCG	GGAGGTGGAG	CTTGCAGTGA	ACCAAGATCT
4401 GAGTGCAATG GCGCAAATCT CCTCTCACCG CCACCTCCGC CTCCTGGGTT 4451 CAAGTGATTC TCCTGCCTCA GATTCCCGAG AAGTTGGGAT TACAGGCATG 4501 TGCCACCACT CCCGGCTAAT TTTGTATTTT TGGTAGAGAC GGGGTTTCTC 4551 CATGTTGGTC AGGCTGGTCT CAAACTCCCG AAGTGATCCG CCCGCCTCAG 4601 CTTCCCAAAG TGTTGGGATT ACAGGCGTGA GCCACCGCGC CCGGCAGAAA 4601 CTTCCCAAAG TGTTGGAACA TACAGGCGTGA GCCACCGCGC CCGCAGAAA 4601 TGGCATGGAT ACATGTCAAA TACCAGTAGA TATAGCAAAT TCCAGATGTG 4701 TGGCATGGAT GAGAGCAACA AGATTTCAGG GGGATGGTGG GTTGTGGTTG 4751 GCTATCTGGG TTTTGGAAGA CTTTATAGAA GAGAGACCTG AAAGGGATTT 4751 GCTATCTGGG TTTTGGAAGA CTTTATAGAA GAGAGACCTG AAAGGGATTT 4801 ATCAGCAATT AGATTTGGAG GAACAGAGGG AGTGACTAGG ATTTTCAAG 4851 GGGAGAAGA AGGAGGAATG GCTCATAAAT GACAAGGAC GTAATAAGTA 4901 AATACGGTGT CAAATCATCC TTTCTTTTGA AGACAAGGACA GTAATAAGTA 4901 AATACAGGTA CATATATTT TATTCTTTTT TCTTGGAACA ATACATGG 5001 TATCTGGCCT ACTATATTT TATTCTAGAC TGTTTAGTAA AATAAACAG 5051 GAATTTGAGA AAACCTTTGC AAAAGTGTTA GTGAAAAATTA CTTAGGGGAA 5101 GAGGAAGTGA GAGATATTT ATTAGGGGAG GTCACAAGGG CAGTGAGCAA 5101 GAGGAAGTAA AGACCTTTGC AAAAGTGTTA GTGAAAAATTA CTTAGGGGAA 5101 GAGGAAAAAA TTCTTTAGTG TTTTATCACG CAAATACAAG CTCATTCGTT 5201 CTTGTTATCT TTATAAAAGT AATTAGAGAA AATTAGAGAA 5251 GAAAGAAAAA TTCTTTAGTG TTTTATCACG CAAATACAAG CTCATTCGTT 5301 TTTAACATCT TGGATGCTTT TCCCTGCTTCC AGATTACAAG CTCATTCGTT 5401 AACAATGGTA TATTAGCTAA TGTTTACAAA TGTATCTCCT TCAATAAACT 5410 AACAATGGTA TATTAGCTAA TGTTTACAAA TGTACTCCAG ATGTTCCTTA 5451 AGTTACTTTG GTTTTACATT ACCAAATTTA TTTTGTTTTT TTAAAAACT 5501 ATAATCTTTG GTTTATCATT ACCAAATTTA TTTTGTTTTT TTTAGAAATTT 5501 ATAATCTTTG GTTTATCATT ACCAAATTTA TTTTTTTTT TTTAGAAATTT 5501 ATAATCTTTG GTTTATCATT ACCAAATTTA TTTTTTTTT TTTTTTTTT	4301	GGCCACTGCA	CTCCAGCCTG	GACGACAGAG	CAAGACTCCG	TCTCAAAAAA
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4601 CTTCCCAAAG TGTTGGGATT ACAGGCGTGA GCCACCGCGC CCGGCAGAAA 4651 TAGATTTTAT ACATGTCAAA TACCAGTAGA TATAGCAAAT TCCAGATGTG 4701 TGGCATGGAT GAGAGCAACA AGATTTCAGG GGGATGGTGG GTTGTGGTTG 4751 GCTATCTGGG TTTTGGAAGA CTTTATAGAA GAGAGACCTG AAAGGGATTT 4801 ATCAGCAATT AGATTTGGAG GAACAGAGGG AGTGACTAGG AATTTCAAG 4851 GGGGAGAGAA AGGAGGAATG GCTCATAAAT GACAACGACA GTAATAAGTA 4901 AATACAGCCA GAAACAGTT TTATATTTTT TCTGGGATCA AATACATCA 4951 ATCAAACCCA GAAACAGTTT TTATATTTTT TCTGGGATCA AATACATGGG 5001 TATCTGGCCT ACTATATTTG TATTCTAGAC GTGAAAAATA AATAATACAG 5051 GAATTTGAGA AAACCTTTGC AAAAGTGTTA GTGAAAAATTA CTTAGGGGTGA 5101 GAGGAAGTGA GGGATATTTT ATTCTAGAC GTCAAAGGG CAGTGAGCAA 5151 TCAGATTTTT AGTAATCTGA CTTAAGCAGT TTCTTTTTGT TTTAATGAAG 5201 CTTGTTATCT TTATAAAAGT AATTAGAGAA AATTTGGAAA ATAAAGGAAA 5251 GAAAGAAAAG TTCTTTAGTG TTTTATCACG CAAATACAAG CTCATTCGTT 5301 TTTAACATCT TGTTCCAAAC TCCAAAGTCT TGCTTTCTCT TCAATTAAAA 5351 CTTTAATGGG TGGATGCTTT TCCTGCTTCC AGATATCACG CTCATTCGTT 5401 AACAATGGTA TATTAGCTAA TGTTTACAAA TGTACTCCAG ATGTTCCTTA 5401 AACAATGGTA TATTAGCTAA TGTTTACAAA TGTACTCCAG ATGTTCCTTA 5501 ATAATCTTTG GTTTATCATT ACCAATTTAT TGTTATCTCAG ATGTTCCTTA 5501 ATAATCTTTG GTTTATCATT ACCAATTTAT TTTTGTTTTTTTTTT						
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4751 GCTATCTGGG TTTTGGAAGA CTTTATAGAA GAGAGACCTG AAAGGGATTT 4801 ATCAGCAATT AGATTTGGAG GAACAGAGGG AGTGACTAGG AATTTCAAG 4851 GGGGAGAAGA AGGAGGAATG GCTCATAAAT GACAAGGACA GTAATAAGTA 4901 AATACGGTGT CAAATCATCC TTTCTTTTGA AGACCTAATGA CCTCAAAGGG 4951 ATCAAAACCCA GAAACAGTTT TTATATTTTT TCTGGGATCA AATACATGGG 5001 TATCTGGCCT ACTATATTG TATTCTAGAC TGTTTAGTAA AATAATACAG 5051 GAATTTGAAA AAACCTTTGC AAAAGTGTTA GTGAAAATTA CTTAGGGTGA 5101 GAGGAAGTGA GGGATATTTT ATTAGGGAG GTCACAAGGG CAGTGAGCAA 5101 GAGGAAGTGA GGGATATTTT AGTAATCAG TTTCTTTTTGT TTTAATAGAG 5101 CTTGTTATCT TTATAAAAGT ATTAGGGAG GTCACAAGGG CAGTGAGCAA 5201 CTTGTTATCT TTATAAAAGT AATTAGAGAA AATTTTGGAAAA AATAATGAAG 5201 CTTGTTATCT TGATAAAAGT ATTAGAGAA AATTTGGAAA ATTAAGAGAA 521 GAAAGAAAAG TTCTTTAGTG TTTTATCACG CAAATACAAG CTCATTCGTT 5301 TTTAACATCT TGTTCCAAAC TCCAAAGTCT TGCTTTCTCT TCAATTAAAA 5351 CTTTAATGGG TGGATGCTTT TCCTGCTTCC AGTATGTTAT CTTAATAACT 5401 AACAATGGTA TATTAGCTAA TGTTTACAAA TGTACTCCAG ATGTTCCTTA 5451 AGTTACTTG GTTTATCATT ACCAATTTAT ATTGTTTCT TTAGAAAATTT 5501 ATAATCTTTG GTTTACATT ACCAATTTAT TTGTATGAAA AATGGGATCT 5551 TGAGAAAAAA GATTCTGAAG CAACAGAATT TTTAGATTTA TATTGGTTTA 5601 CATAAGAGTT GTTAGCTGTA TCTCCAGGC CTTGGCCTC CAAAGTCTT 5701 GGATTACAGG CGTGAGCCAC TGTGCCTGGC TGTTTTTTTTTT	4651	TAGATTTTAT	ACATGTCAAA	TACCAGTAGA	TATAGCAAAT	TCCAGATGTG
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4901 AATACGGTGT CAAATCATCC TTTCTTTTGA AGACTAATGA CCTCAAAGGG 4951 ATCAAACCCA GAAACAGTTT TTATATTTT TCTGGGATCA AATACATGGG 5001 TATCTGGCCT ACTATATTG TATTCTAGAC TGTTTAGTAA AATACATGGG 5051 GAATTTGAGA AAACCTTTGC AAAAGTGTTA GTGAAAATTA CTTAGGGTGA 5101 CAGGAAGTGA GGGATATTTT ATTAGGGAG GTCACAAGGG CAGTGAGCAA 5151 TCAGATTTTT AGTAAAAGT AATACAGG GTCACAAGGG CAGTGAGCAA 5151 CAGATTTTT AGTAAAAGT AATTAGAGAA AATTAGAGAA ATTAGAGAA ATTAGAGAA ATTAGAGAA 5201 CTTGTTATCT TTATAAAAGT AATTACAGG CAAATACAAG CTCATTCGTT 5301 TTTAACATCT TGTTCCAAAC TCCAAAGTCT TGCTTTCTCT TCAATTAAAA 5351 CTTTAATGGG TGGATGCTTT TCCTGCTTCC AGTATGTAT CTTAATAACT 5401 AACAATGGTA TATTAGCTAA TGTTTACAAA TGTACTCCAG ATGTTCCTTA 5451 AGTTACTTG GTTTATCATT ACCAATTTAT ATTGTTTTT TTAGAAATTT 5501 ATAATCTTG GTTTATCATT ACCAATTTAT TGGTAGGAA AATGGGATCT 5551 TGAGAAAAAA GATTCTGAAG CAACAGAATT TTTTGTTTTT TTTTTTTTT 5601 CAAAGAGTT GGTAGCCAC CACACAGAATT TTTTTGTTTT TTTTTTTTT 5701 GGATTACAGG CGTGAGCCAC TGGCCTGC TGTTTGTTT TTTTTTTTTT						
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5151 TCAGATTTT AGTAATCTGA CTTAAGCAGT TTCTTTTGT TTTAATGAG 5201 CTTGTTATCT TTATAAAAGT AATTAGAGAA AATTTGGAAA ATAAAGGAAA 5251 GAAAGAAAAG TTCTTTAGTG TTTTATCACG CAAATACAAG CTCATTCGTT 5301 TTTAACATCT TGTTCCAAAC TCCAAAGTCT TGCTTCTCT TCAATTAAAA 5351 CTTTAATGGG TGGATGCTTT TCCTGCTTCC AGTATGTTAT CTTAATAACT 5401 AACAATGGTA TATTAGCTAA TGTTTACAAA TGTACTCCAG ATGTTCCTTA 5451 AGTTACTTG GTTTACATT ACCAATTTAT ATTGTTTCTT TTAGAAATTT 5501 ATAATCTTTG TTAATGGGT CTGCTAAATT TGGTAGTAAA AATGGGATCT 5551 TGAGAAAAAA GATTCTGAAG CAACAGAATT TTTAGATTTA TATTGGTTTA 5601 CATAAGAGTT GGTAGCTGTA TTACTTTTTT TGTTTGTTTT GTTTTTTTTT 5651 TGAGACGAA TCTTGCTCTG TCGCCCAGGC CTTGGCCTCC CAAAGTGTTG 5701 GGATTACAGG CGTGAGCCAC TGTGCCTGGC TGTTTGTTT TTTTTTTTTT						
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5351 CTTTAATGGG TGGATGCTTT TCCTGCTTCC AGTATGTTAT CTTAATAACT 5401 AACAATGGTA TATTAGCTAA TGTTTACAAA TGTACTCAG ATGTTCCTTA 5451 AGTTACTTTG GTTTATCATT ACCAATTTAT ATTGTTTCT TTAGAAATTT 5501 ATAATCTTTG TTAATGGGTT CTGCTAAATT TGGTAGTGAA AATGGGATCT 5551 TGAGAAAAAA GATTCTGAAG CAACAGAATT TTTAGATTTA TATTGGTTTA 5601 CATAAGAGTT GGTAGCTGTA TTACTTTTTT TGTTTTTTTTTT						
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5451AGTTACTTTGGTTTATCATTACCAATTTATATTGTTTCTTTTAGAAATTT5501ATAATCTTTGTTAATGGGTTCTGCTAAATTTGGTAGTGAAAATGGGATCT5551TGAGAAAAAAGATTCTGAAGCAACAGAATTTTTAGATTTATATTGGTTTA5601CATAAGAGTTGGTAGCTGTATTACTTTTTTTGTTTGTTTTGTTTTTTTTT5651TGAGACGGAATCTTGCTCTGTCGCCCAGGCCTTGGCCTCCCAAAGTGTTG5701GGATTACAGGCGTGAGCCACTGTGCCTGGCTGTTTGTGTTTTTTTTTGTT5751TTTGTTTTCTTTTCTTTTCTTTTTTTCGAGATGGAGTCTCACTCTGTCA5801CCCAGGCTGGAGTGCAGTGGCGCGATCTGGCTCACTGCAATCTCTGCCT5851CCTGGGTTCAAGCGATTTTCCTGCCTTGGTCTCCTGAGTAGCTGGGATTA5901CAGCATTTGCCACCATAACCAGCTAATTTTTGTATAGAGTACCCAGCCA						
5501 ATAATCTTTG TTAATGGGTT CTGCTAAATT TGGTAGTGAA AATGGGATCT 5551 TGAGAAAAAA GATTCTGAAG CAACAGAATT TTTAGATTTA TATTGGTTTA 5601 CATAAGAGTT GGTAGCTGTA TTACTTTTTT TGTTTGTTTT GTTTTTTTT 5651 TGAGACGGAA TCTTGCTCTG TCGCCCAGGC CTTGGCCTCC CAAAGTGTTG 5701 GGATTACAGG CGTGAGCCAC TGTGCCTGGC TGTTTGTTT TTTTTTTTT 5751 TTTGTTTTCT TTTCTTTTC TTTTTTCGA GATGGAGTCT CACTCTGTCA 5801 CCCAGGCTGG AGTGCAGTGG CGCGATCTTG GCTCACTGCA ATCTCTGCCT 5851 CCTGGGTTCA AGCGATTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATT TTGTATAGAG TACCCAGCCA						
5551 TGAGAAAAAA GATTCTGAAG CAACAGAATT TTTAGATTTA TATTGGTTTA 5601 CATAAGAGTT GGTAGCTGTA TTACTTTTTT TGTTTGTTTT GTTTTTTTT 5651 TGAGACGGAA TCTTGCTCTG TCGCCCAGGC CTTGGCCTCC CAAAGTGTTG 5701 GGATTACAGG CGTGAGCCAC TGTGCCTGGC TGTTTGTGTT TTTTTTTGTT 5751 TTTGTTTTCT TTTCTTTTC TTTTTTCGA GATGGAGTCT CACTCTGTCA 5801 CCCAGGCTGG AGTGCAGTGG CGCGATCTTG GCTCACTGCA ATCTCTGCCT 5851 CCTGGGTTCA AGCGATTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATT TTGTATAGAG TACCCAGCCA	5451	AGTTACTTTG	GTTTATCATT	ACCAATTTAT	ATTGTTTCTT	TTAGAAATTT
5551 TGAGAAAAAA GATTCTGAAG CAACAGAATT TTTAGATTTA TATTGGTTTA 5601 CATAAGAGTT GGTAGCTGTA TTACTTTTTT TGTTTGTTTT GTTTTTTTT 5651 TGAGACGGAA TCTTGCTCTG TCGCCCAGGC CTTGGCCTCC CAAAGTGTTG 5701 GGATTACAGG CGTGAGCCAC TGTGCCTGGC TGTTTGTGTT TTTTTTTGTT 5751 TTTGTTTTCT TTTCTTTTC TTTTTTCGA GATGGAGTCT CACTCTGTCA 5801 CCCAGGCTGG AGTGCAGTGG CGCGATCTTG GCTCACTGCA ATCTCTGCCT 5851 CCTGGGTTCA AGCGATTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATT TTGTATAGAG TACCCAGCCA	5501	ATAATCTTTG	TTAATGGGTT	CTGCTAAATT	TGGTAGTGAA	AATGGGATCT
5601 CATAAGAGTT GGTAGCTGTA TTACTTTTT TGTTTGTTTT GTTTTTTTT 5651 TGAGACGGAA TCTTGCTCTG TCGCCCAGGC CTTGGCCTCC CAAAGTGTTG 5701 GGATTACAGG CGTGAGCCAC TGTGCCTGGC TGTTTGTGTT TTTTTTTGTT 5751 TTTGTTTTCT TTTCTTTTC TTTTTTCGA GATGGAGTCT CACTCTGTCA 5801 CCCAGGCTGG AGTGCAGTGG CGCGATCTTG GCTCACTGCA ATCTCTGCCT 5851 CCTGGGTTCA AGCGATTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATT TTGTATAGAG TACCCAGCCA						
5651 TGAGACGGAA TCTTGCTCTG TCGCCCAGGC CTTGGCCTCC CAAAGTGTTG 5701 GGATTACAGG CGTGAGCCAC TGTGCCTGCC TGTTTGTGTT TTTTTTTGTT 5751 TTTGTTTCT TTTCTTTTC TTTTTTCGA GATGGAGTCT CACTCTGTCA 5801 CCCAGGCTGG AGTGCAGTGG CGCGATCTTG GCTCACTGCA ATCTCTGCCT 5851 CCTGGGTTCA AGCGATTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATT TTGTATAGAG TACCCAGCCA						
5701 GGATTACAGG CGTGAGCCAC TGTGCCTGGC TGTTTGTGTT TTTTTTTGTT 5751 TTTGTTTCT TTTCTTTTC TTTTTTCGA GATGGAGTCT CACTCTGTCA 5801 CCCAGGCTGG AGTGCAGTGG CGCGATCTTG GCTCACTGCA ATCTCTGCCT 5851 CCTGGGTTCA AGCGATTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATT TTGTATAGAG TACCCAGCCA						
5751 TTTGTTTCT TTTCTTTTC TTTTTTCGA GATGGAGTCT CACTCTGTCA 5801 CCCAGGCTGG AGTGCAGTGG CGCGATCTTG GCTCACTGCA ATCTCTGCCT 5851 CCTGGGTTCA AGCGATTTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATTT TTGTATAGAG TACCCAGCCA						
5801 CCCAGGCTGG AGTGCAGTGG CGCGATCTTG GCTCACTGCA ATCTCTGCCT 5851 CCTGGGTTCA AGCGATTTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATTT TTGTATAGAG TACCCAGCCA	5701	GGATTACAGG	CGTGAGCCAC	TGTGCCTGGC	TGTTTGTGTT	TTTTTTTGTT
5851 CCTGGGTTCA AGCGATTTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATTT TTGTATAGAG TACCCAGCCA	5751	TTTGTTTTCT	TTTCTTTTTC	TTTTTTTCGA	GATGGAGTCT	CACTCTGTCA
5851 CCTGGGTTCA AGCGATTTTC CTGCCTTGGT CTCCTGAGTA GCTGGGATTA 5901 CAGGCATTTG CCACCATAAC CAGCTAATTT TTGTATAGAG TACCCAGCCA	5801	CCCAGGCTGG	AGTGCAGTGG	CGCGATCTTG	GCTCACTGCA	ATCTCTGCCT
5901 CAGGCATTTG CCACCATAAC CAGCTAATTT TTGTATAGAG TACCCAGCCA						
5951 TUTUTAATGT TGATUAGGUT GAAGCAGGTG GATUACCTAA GGTCAGGAGT						
	232T	TCTCTAATGT	1 GAT CAGGCT	GAAGCAGGTG	GATCACCTAA	GGTCAGGAGT

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FIGURE 3B

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6001 TCAAGACCAG CCTGGCCAAT ATGGCAAAAC CCTATCTCTA CTAATACAGA 6051 AAATTATCTG GGTGTGTTGG CTGGCGCCTG TAATCCCAGC TACTCGGGAG 6101 GCTGAGGCAG GACAATCTCT TGAACCTCGG AGGTGGAGGT TGCAGTGAGC

6051 AAATTATCTG GGTGTGTTGG CTGGCGCCTG TAATCCCAGC TACTCGGGAG 6101 GCTGAGGCAG GACAATCTCT TGAACCTCGG AGGTGGAGGT TGCAGTGAGC 6151 CGAGATCACA CCATTGCACT CCAGCCTGGG CAACAGAGCA AGACTTGTCT 6201 CAAAAAAAA AAAAAAAAA AAAAAAAGGC AATTGAAAGT GTAATCTGAA 6251 CAGTTAAAAA AGTAGATAGA AAGGGTTAAA GCTTTTTTTT GAGGATCTGA 6301 AGAAAAATGT GGATTTTTT TGAGCTACGT TTTGAAGCAG GCAGTGATTA 6351 TTTCAGCACA TTAAGAAATG CTTAACATGG CCAGGCGCAG TGGCTCACGC 6401 CTGTAATTCT CAGCACTTTG GGAGGCCGAG GTGGGCGGAT CATTTGAGGT 6451 CATGACCAGC CTGGCCAACA TGATGAGACA CTGCCTCTAC TAAAAATACA 6501 AAAATTAGCT GGGTGTGGTG GTGCACGCCT GTAATTCCAG CTACTCAGGA 6551 ACCTGAGGCA GGAGAGTCAC TTGAACCTGG GAGGCGGAGG CTGCAGTGAG 6601 TCCAGATCAT GCCACTGCAC TCCAGCCTGA GGGACAGAGT GAGACTCCTC 6651 AAAAAAAAA AAAAAAAAG AAAGAAATAC TTAACATTAT TCTCGTGATT 6701 ATTCTCATAA CATTTTCAT AATCCACTGG CTTCCAGTGG ATTTTTTTAG 6751 TGTCAAGAAA ATAATTTTGA TTGGTTCATC TTTAAGGAAT GTGTTAAGAA 6801 TAAAGCATGT CTACCTGTCT TCAGTATACC AGCTAACTAT AGTAGGAAGA 6851 AATATAGTAG TCTACTTAGA TCAACTATAA TTCTTTAATG CAGAAAAAGT 6901 TTAAAGTATT TACCTTATTT TTAGCCCCCA TCCCCTTAAG TATATCATGG 6951 CTCCAGAATC TCTGAAAATG TTATCAGTCT TTCAGACTTT GCTCTTCTTT 7001 CATGTTATAC TCAAGAAACA TTTGACCTTT TTTTTTTTT TTTTGCTTGC 7051 ATTGTGTTTC AAATAATTTT TAACAAAACT TAAGTGTTTG AAAGTGAAAG 7101 CAGGTTGTCT TTGTGACTTT TGGTGGTGGT TTGAAAAACT CAGAAAAGTT 7151 TAAAGAAGAA AGATAACTAG TATTCTCATT GTCCAGAATA TGATTTTTTA 7201 AATGTCTATA GAATATCACC ATCTGTAATT CTTCCGGTAA TTTAAGTATT 7251 CAGTAGTTGT ATAAAACCTT TAAAATATAT ATATTGAGAA TTTTGTGTGA 7301 ATGAGATGAT GAGATAATCT TGTAGGATCA TTTAAAGATA AGAACTGAGG 7351 CCTGGCACAG TGGCTCATGC CTATAATCAC AGCACTTTGG GAGGCCCAGG 7401 CGGTAGATCA CCTGAGGTCA GGAGTTTGAG ACCAGCCTGG CCAACATGGC 7451 AAAACCCTGT CTCTACTAAG CATAGAAAAA TTAATTGGGT GTGGTCGTGC 7501 CTGCGTGTAG TCCCAGCTGC TTGGGAAGCT GAGGCGGGAG AATCTCTTGA 7551 ACCCTGGAGG TGGGCATTGC AGTGAGCTGA GATTGCGCCA CTGCACTCCA 7601 GCCTGGGCGA CAGAGCAAGA CTCTGTCTCA AAATAAAGTA AAATAAAATG 7651 AAGATAACAA CTGAAATTTC ACATTAAAAA TTTTTTTGTA GCGACTGTGC 7701 CTCCTATGTT GTGCAGGCTG GTCTCAAACT CCTGGCCTCA AGCGATCCTT 7751 CCAAAGCACT GGGTGGGCCA CCATGTCCAG CCTGAAATTT TGCATTAAAA 7801 AATTTCCCGC TTTTGGCTGG GCGAGGTGTC TCACGCCTGT AATAGCAGTT 7851 TGGGAGGCCG AGGCAGGCAG ATCACTTGAG GTCAGTTCTA GACCGGCCTG 7901 GCCAATGTGG TGAAACCCTG CCTCTACTAA AAACACCAAA TTAGCTAGGC 7951 GTGGTGGTGT GCGCTTGTAG TCCCAAGCTA CTGAGGAGGC TGAGACAAGA 8001 GAATCGCTTG AATCTGGGAA AAAGAGGTTG CCGTGAGCCA AGATTGGCCA 8051 CTGCACTCCA GCCTGGGTGA CAGAGTGAGA TTCTGTCTCA AAAAAATAAA 8101 AAATAAAAT TTCCCCCTTT AATCAAATTA AGTTAAAATG AGGGATGTTA 8151 GACAGTTTTT AACCATCAAA TATTTTAGTT TAGTTTTTTT TTTTTAACGT 8201 TGTCTTAAAG ATGGAAGTGC TTCAAAATCA AATCTTCCTT GCCAGTTCTC 8251 TACTTGGCTT CTTTTTTTT CTTTTTGAGA TAGAGTCTCA CTTTGTCACT 8301 GGAGTGCGTT GGCGTGATCT CGGCTCACTG CAACCTCCGC CTTCCAGGTT 8351 TAAGTGATTC TTCCACCTCA GCCTCTCAAG TAGCTGGGAG TACAGGTGTG 8401 TGCCACCACA CCCGGCTAAT TTTTGTAGTT TTAGTAGAGA CAGGGTTTCA 8451 CTATGTTGGC CAGGCTGGCC TCAAACTCCT GACCTCGTGA TCCACCCACC 8501 TCAGCCAAAT TGCTGGGATT ACTTGTGTGA GCCACGCGCC TGGCTTCTAC 8551 TTGGCTTTTA AAGGGAATTT TGCTTTCTGA GTAATTTTAT TTCTCAGGTA 8601 TCTTGGTCTT TTTAATTCTG GAAGCAATCT TAATAATTTA TGTATGTGCC 8651 CTGTAATCCC AGCACTTTGG GAGGCCGAGG TGGGCGAATC ACGAGGTCAG 8701 GAGATCGAGA CCATCCTGGC TAACACGGTG AAACCCCATC TACTAAAAAT 8751 ACAAAAATT AGCTGGGCGT GGTGGCAGGC GCCTGTAGTC CCAGCTACTT

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FIGURE 3C



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0001	NININTATATATATATATATATA	ATATATATATATATATAT	NNNNNNNNN	NTATATATATATATATATAT	NININININININININI
			NNNNNNNNN		
9301	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN
9351	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN
9401	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN
9451	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN
9501	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN
9551	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN
9601	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN
9651	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN	NNNNNNNNN
			NNNNNNNNN		
			NNNNNNNNN		
			NNNNNNNNN		
			GAGTGCAGTG		
			CAGCATTTCT		
			ACCACCACGG		TTTATATTAG
			GTTGGCCAGG		
			GGTCTCCCAA		
			TTATCAGCTT		
			GAGAATTAGG		
			AGAGGGGAGC		
			GAGATTACTG		
			TCTTGGCCTT		
10351	GTGTTGCAGA	TTATTAATAG	GGTAATGGTG	GAATGATATT	CAGGGGAAAA
10401	ATGGTCCTGA	GGAGCCAGAG	AACTAAGTGT	TAGTTTGTTG	GCTGACTGAA
10451	ACATGTGAGA	GATAGGGTAC	AGAAGAAGTA	GGAAATAGTT	TTCCTTGGTA
10501	CTTCTGTGAC	AGGTTGGCTC	AATTGGCTGG	AACACCCTAC	ACTGCTTTAT
10551	TAAATCCAAG	GTTGTGATAG	GTTCCAGTTA	AGTTTACTGT	GTTCTATGCT
10601	TGTAGATTTC	CTAATTAGGA	CAAGTAGTGT	TAAATATGCA	TGCCTTTATT
10651	CACAAGAGGG	ACCATTCTTT	TGGAAACATC	ACTTTTTAAT	AATACTAGGT
10701	GCTATTTAGC	ACTTACTCGG	TGCCAGCCAC	GTGGCTATGG	TTTTTTTTT
10751	TTTTTTTTT	CGAGACATGA	TCTAGCTCTG	TCTCCCAGGC	TGGAGTGGTG
10801	GTAGCACAGT	CATGGCTCAC	TGCAGTCTCA	ACCTCCTGTA	CTCTAGTGAT
10851	CCTCCTGTCT	CAGCCTCCTG	AGTAACTGGC	ACCATGCCTG	GCTAATTTTT
			TATGTTGCCT		
			CCTGAGCCTC		
			CCATCTATGG		
			AGTGATCTTC		
11101			AGAACAATGA		
11151			TAGTACTTAA		
11201			TTTTCTGGTA		
11251			TGTAGCCATA		
11301			ATACTCATAT		
11351			GTTCATGAAC		
			AAAGAGAATG		
			GTGACAAAGC		
			TTTTTTTTT		
			GGAGTGTAGT		
			CAAGTGATTC		
			GCCACCACGC		
11701	ATAGTAAAGA	CGGAGTTTCA	CCTTATTGGC	CAGGCTGGTC	TCAAACTCCT
11751	GATCTTGTGA	TCCTCCCGCC	TCGGCCTCCC	${\bf AAAGTGCTGG}$	GATTACAGGT
11801	GTGAGCCACT	GTTCCCGGCC	TAATTTGAGT	TTTAAAATGT	GGAGTTTAAG
11851	ATGTTAGTCT	TAAAGTGGGT	TAGATGAAAT	TTATAAAAAT	AGTCAAATAG
11901	CTAAATTTAT	AAAAGGCCAT	TTGAAACAAT	TTTGTGAAAT	ATATAATGTG
			TGTGTAGATT		
-					

FIGURE 3D



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			~~ ~~~~ ~~~ ~		, mama, , ama
	TGAAGAGCAG				
	CAAATTAGGC				
	TTTTTTATTT				
12151			CCCATGTTAC		
12201			ACCTTAGCCT		
12251	GCTGTGAGCC				
12301			GAATCACACT		
12351	TTCTGGGTGC	TAGTTTATAT	ATGATTTGAT	TCATTCTGAT	AGGGTTTTTT
12401	TGTTTTTTT	TGTTTTTGTT	TTTTTTTTT	TTTTGAGACA	GAGTCTAGCT
12451	CTGTCGCCCA	GGCTGGAGTG	TGGTGGCTCG	ATTTCGGGTC	ATTGCAACTT
12501	CTGCCTCCCA	CCCAGGCTGG	AGTGCAGTGG	CTCGATTTCG	GGTCATTGCA
12551	ACCTCTGCCT	CCCAGGTTCA	AGCGATTCTC	CTGCCTCAGC	CTCCTGAGTA
12601	GCTGGGATTA	CAAGCACCCA	CCACCATGCC	CGGCTAATTT	TGTGTATTTT
12651	TAGTAGAGAC	TGGGTTTCAC	CATGTTGACC	ACGCTGGTCT	CGAACTCCTG
12701	ACCTCAGGTG	ATCTGCCTGC	CTTGGCCTCC	CAAAGTGCTG	GGATTACAGG
12751	TGTGAGCCAT	CACACCAGGC	CTCAAGAACT	TTTTATTTT	GAGACAGGGT
12801	CTCACTCTGT	CACCCAGGCT	GGAGTACAGT	GGTGAGATCA	TGGCTTACTG
12851	CAGCCTGGAC	TTCCCAGGCT	CTGGTGATCC	TCCCATCTCA	GCCCCTGGAG
12901			CACCCATGCC		
12951					
	CTGGTTTTGA				
	CGTGCTGGGA				
	AAAACTTTTT				
	TATACATAGG				
	AAGAAAATAG				
	GCACTTTGGG				
	ACCAGCCTGG				
13351			GTGCCTGTAG		
	GAGGCAGGAG				
	GATTGTGCTA				
	AAAAAACAAA				
	GAGTATATTA				
	TTTATTTTAA				
	CTCATGTTCA				
13701					
	GAAGGGGCCT				
	ACTGGAGAGG				
13851			CTGAGTTCCC		
	GTGTACATTA				
	CTAGTTTTAC				
	CCAAGGGCAT				
	TGGATGTCCC				
	TACTTCTAAG				
	AATCTCAGCA				
	GTTTGAGACC				
	AAAAAAAAA				
14301	TCAGGAGGCT				
14351					
	GCCTATCTCA				
	GGCACTAACA				
14501	TGATGTGGTG	GCTCATGCCT	GTAATCCCAG	CACTTTGGGA	GGCTGAGGCA
14551	GGAGGATTGC	TTAAGGCCAA	GAGTTCAAAT	CAGCCTGAGC	AACCTAGTAA
14601	GATCCCCTTT	CTGCAAAAAA	TTTAAAAATT	AGCTGGGCAT	GGTAGTGTGC
14651	ACCTGTAGTC	CCAACCACTT	GGGAGGCTGA	${\tt GGTGGGAGGA}$	TTGCCTGAGG
14701	CCAGGAGTTT	GAGACCTGGG	CAGCATATGA	AGACCCTGTC	TCTAAAAAAC
14751	TAAAAATAAA	AAATAGCCAG	${\tt GTGTGGTTGG}$	${\tt TGTGCTTGTG}$	GTCCCAGCTA
14801	CTCAAGAGGC	TGAGGCAAGA	GGGTTGCTTG	AGCCCAGAAG	TTGGAGGCTG
14851	CCGTGAACTG	TGATTGCACC	ACTGCACTTC	AGCCTGGGTG	ACATAGCAAG
14901	ACCCTGTCTC	TGTGGTGGTG	GTGGGTGGGG	GTGGGGGAAG	GGATTTAAGA
	AGGGTTTGTG				

FIGURE 3E

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15001 TCACATCTTG GGTTGAAATT AATTGTATCC ATTCTCAGTT TTTCTGTCTT 15051 GCTATATATT TAAACTTGGA GACTTAGAGG TCATGGATGT CTTTCTATGA 15101 AAAGCAAATG AAGCAGAGGG CTGCCTTCTC TTGCTGTAGA GGGCACACTT 15151 GCTGCAGAGC ATGTTACTGT TTTATGCATT GCTAGGCTTT GGGAGTTGTG 15201 ACTTGTATGA TCATAGTACT TACAACTATT AGTTGGCAAT TTTTAAACTT 15251 TAACTTTAGA TTATATATGT AAACTCCTGT GTTCCTTTGT CACTGATAAT 15301 CTGAACAGAA GCCTTGGATA AATAATTTTG AAGTTTTTGT CTGAACCTCT 15351 GAAATTTGTA TTGTTATCTC ATGGTTTTGC TGGGAGGAAG GAGAAATAAC 15401 AATGGCCACT TACTGTGCTT CTGTATGTGC CAGACAGTAT GTGCTAGATG 15451 TTTCAGAAAC GTGATTTGTA ATCCTGACAA GAAGCCTAAT TGGGTGGTAG 15501 TGGGTGCTAA TTGAACCTTA TAGATGAGGA AATTGAGGCT CATGGTGGTA 15551 AGTGAATAAC TTGCACCAAG ATCCTATGGC TGGTATGCAG TAGAGCCTCA 15601 ATTCAAGTAC GGGTCTTCCA GGTCCAAACC CATGCAGGCT TTGAGAGGTA 15651 AGGAGGTAGA GAACGTTGAC ACCCCCTTCT TGGTGTGTTT TTCAGCAAAT 15701 ACTTGTATGC ATATTAAAGA CTGTCTACCC TTTTGTCATC TTGTGTCACT 15751 TGCTGCTTCC TTTGGTACTA CCCAAATTTC TTTCAGCATT TCAGCTTTGA 15851 CACTCTGTTG TCCAGGCTGG AGTGCAGTGG CGTGATATCA GCTCACTGCA 15901 ACCTCTGCCT CACAGGTTCA AGCAATTCTT CCTGCCTCAG CCTCCTTAGT 15951 AGCTGGGACT GGAGGTGCCC ACCACCACGC CCAACTAATT TTTGTATTTT 16001 TAGTAGAGAT AGGGTTTTAC CTTGTTGGCC AGGCTGGTTT TGAACTCTTG 16051 GCCTCAAGTG ATCCACCCAC CTCGGCCTCC CAAAATGCTG GGATTACAGG 16101 CATGAGCCAC TGCACCTGGC CAGCTTTGAA TTTTTAGAAT ACTGTTCTAA 16151 ACAGAACTAT ATTGGAACCT GGAAAATTAA TCTATTGTCT CTAAATACCA 16201 AAGAAAACA TGTAATTTTA GTGGTTGATT ATGGGAACAA TTTTTTTTAA 16251 GATGGTTCAT CTGAATGGGA AGCATTTTTT TTTTAATTGC TTGACTATTT 16301 CTTTAAATTT GGAGAAAAGA CCATTGCCCT CTCAGATTTC TGGTAATTGG 16351 TCACATTGAT CATTTATATT GACTGACAGG CTGCTTTGTC CACAGCTGAA 16401 GGATTGTTTA ATTTTTTTTA AATTATAAGA GTAATATGTG CTCACTGTAA 16451 AATTCACAGT ACAGAAGCAT ATGAACTAAC TAAAAGTTCT TACCTCTTGT 16501 CTCCAGCAAG GAGTAAGTGT TTCAACCTGA AGGTTGGTTT TGAATTGTGT 16551 TCTGTGGAGC GTACTTAAAG TGAGTGAAGA AGAAAAATTT ATGTCAATCA 16601 TGATCATTGC AGCTGAAGTT TTTATTGTTT CACCCCCTAA AGGTTATTAA 16651 AATAGTATGT AGTTTAGTAG TCTTGATAAT TTTCCCTTAA GATTTATTGG 16701 CCAGTATATC AGGATTTTGT TTTAAATTTG ATATGTGAGC TTAGTTTTAT 16751 GCTATTTCA AATAAGACAT TTAGAAGAAG ATAAAATAAC ATTCCTGTCT 16801 TAGTCTGTTT TCTGCTGCTA TAACAGAATA GCACAGACTG GGTAATTTAT 16851 AAACAGTAGA AGTTTATTTG GCCTGTGGTT CTGGAGGCTG GGAACTTCAA 16901 GAGCATGGTT CTGCCCTTTG TGCTGTGTTA TCATATGGTG GAAGGTGGAA 16951 AGGCAAGTGG GTATGTCAAG ACAGAGAGCA AGAAGGGGCT TGAACTCACT 17001 TTTATAACAG AGTGACTCCA GAGATAGCTA ACCCACTTTT GAGAGAATGC 17051 ATTAATCCAT TCATGAGGGC AGAGCCCTTG TGACCTAATC ACCTCTCATT 17101 AGGCTCTGCA TCCTTAAACT GGTTTTTTTT TGTTTTTTT TTTTGAGACG 17151 GAGTCTCGCT CTGTTGCCCA GGCCGGACTG CGGACTGCAG TGGCGCAATC 17201 TCGGCTCACT GCAAGCTCCG CCTCCCGGGT TCACGCCATT CTCCTGCCTC 17251 AGCCTCCCGA GTAGCTGGGA CTACAGGCGC CCGCCACCGT GCCCGGCTAA 17301 TTTTTTGTAT TTTTTTAGTA GAGACGGGGT TTCACCTTGT TAGCCAGGAT 17351 GGTCTCGATC TCCTGACCTC ATGATCCACC CGCCTCGGCC TCCCAAAGTG 17401 CTGGGATTAC AGGCGTGAGC CACCGCGCCC GGCCCCCCTT AAACTGTTGT 17451 ATTGGGGATT AAGTATCTAA CACAGGAACT TTGGAGGATA CATTTAAACC 17501 ATAAGAATTC CTGTCATGCA AATGAATCCA TTCTAGATGA AAGAGAATGA 17551 ATTTAGTTTC CATTGAACTT TATAAATAGG CCTTTTCTAA GGTACTTACA 17601 GCTGATATTA TAAAATTTAT ATTTGTTTTT ATAAATTTGT ATTTGTATTT 17651 CTGTTTGTAC AAATACAATT ATACACTATA GTTCTCTGCT GTTAGATTTT 17701 TTTTCTTCCT TAGCATGTTT CCAAAGGGTG GAATGTTGAA AGTTGGGTTA 17751 ATGTCAATCA GCTTTCTTTT GTAAAGTGTT CATTGACATG TGAACCTTGT 17801 CTGAGAATCT AAATTTTATT TCATGAAAGA AGAAAACAGT ATATTCTCAT 17851 TTAACCCAGA ATTTAACTTC ATATACTTGT GGCTGTATTG GGAGTATGCC 17901 ATTGCTGTCT GTTTACAACC TGACCTACTC TACCTACTTA GAAGTAATTT 17951 GTGTTATGAT AGGTGTGCTG TGCTGACATA TGCTGAACAT ATTTGTAAGG

FIGURE 3F

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S rial No.: 09/820,003
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18001 GTGTTAAGTC ATTGAATAAA ACGCTTTTCT CCTCCTTTCA AATAACATTT 18051 TTTATTTCTG GTTATAAAAG TCATACAAGC TTACTGCAGG TTGTTAAAAA 18101 GGTATAAAGA AGAAACCGTC AATCCATTAT AATCCTACAG TTTAGACTTC 18151 CTGCTCCAGC CTCTCAGAGT GCTGAGATGA GCTAGCCATG CCCAGCCCCT 18201 CAAAAGATTT TTTAAAAAAC AAAAATGAGG TTATACTTTA AAAAATTCTA 18251 TATTCCTTC ACATAACAGT GTTATTTTGG AGGTTTTAGA ATTTCCAGTA 18301 GCATTTTAGA TTCAGAAACA AGCTGATTCA TCCTCTACTT TGTACTTTAG 18351 GCAAGAAAAG AATTTTACCT AAATAGAATT TTGAACTGAA AATCTGTTTT 18401 TCTAACTTTT TATTTAAAGA ATATTGTTCC ATGCTTTCAC AGTAGTGACT 18451 TTTAATTTTT ATATTTTTTA TTTTATTTAT TTAGAGATGG GGGTCTCACT 18501 CTTGTTGCCT AGGCTAGAGT GAGTGCAATG GTTCTATTCC TAGCTCACTG 18551 CAACCTTGAA CTCCTGGGCT CAAGTTACCC TCCTGCCTCA GCCTTCTAAG 18601 TAGCTGGGAC TACAGGTGTG CACCACTGCA CCAGGCTTTT TTTAAAGGCA 18651 TAGAAAATGG TAGTGCTTGC ATACAAAAAT GGCGTAGGTA CATACATCAG 18701 CGGACATCAA GACTATGTTC AGATCATAAA TGTACATATA TGTACCGATG 18751 CCATTTTGC ACGCAAACAA ATAATGGAAA TTGAACTCTA AACTGAAATT 18801 TGAAACAAGG GTTCTGGGGT GGGCCCTCTT GCTGATTTGT AATTGAATGT 18851 ATAGTTCAAT TTTTCCCCAT CTGTTAAGCA AAAGACAATT CTAATGTTAG 18901 CAAAAATCCA CATATCCTGT CATTGATCAT TTTTTCCTTA ATTTTCTTTA 18951 AGAGATGGGG CTTCTCTCTA TGTTGCCCAG GCTGGTCTGG AACTCTTGGG 19001 CTCAAATGAT CCTCCAGCCT CAGCCTCCCA AAGTGCTGGA ATTAATAGGC 19051 ACAAGCTGCT GTGCCTGGCC CTGTCATCAG TCATTTAACT TCATGCAAAC 19101 TGAGTAGAAT AAAACTCGTC CTTACTGTAC CTTATTGCTT TTGTTTTATT 19151 GTTGGAACCT CCAATATTGC GAAAGTAGAC CAAAAGTTGA CTTATAGGAA 19201 AAACTGATAG CAAAAATAAT TTTTCTCTTG TTGCTGTATT TCATGCCCAC 19251 CATCCAGTTG TTAAAGCCTA CTGTTAATTT CTCTCAGCCT CCTCCTTTCT 19301 GTCCAGGCTT ATTCTATGCC ATTCTTACCT TAACTGTTTT TAGCTTTCTC 19351 ATAGAGTGAA CTTTTTAAAT TAAAATAAAA TATCTGCTCG TAGTATTATA 19401 AAATTCAAGC AGTTCAACAG AATTTTTCAC TAATAGAAAT ACTTGTACCT 19451 CAAAAGCAGC TTTATTTTAC AAACCCAGCC CAATTTGTGA TTAGATTTAA 19501 CTTGAGAAAA CATGAAATGT CTCTCATATT GTTTAAAAAT ATCATAAGTG 19551 GCTGGGCACG GTGGCTTATG CCTATAATCC CAACACTTTG GGAGGCTGAG 19601 GCAGGTGGAT CACTTGAGGT CAGGAGTTTG AGACCAGCCA GGNNNNNNN 19951 NNNNNNNN NNNNNNNNN NNNNNNNTTC ACCATGTTGG CCAGGCTGGT 20001 CTCAAACTCC TGACCTCAGG TGATCCACCT GCCTGGGCCT CCCAAAGTGC 20051 TGGGATTATA GGCTTGAGCC TCGCCTGGCC TCCTCATAAT TTTTTAACCT 20101 TTATAAAAAC CTTTTCTAAA ACCCTTTTTA TTTTGAACTA AATTTAGATT 20151 TACTGAAATT GTGAAATCAA TGTGGAGTTC TTGTATACCC TTCTTTCCGC 20201 TTTTCCTAAT AGTAACATCT TACATACATG GTACATTTGT CCAAATTAAG 20251 AAATAAACAT TGGTACAGTG TTAACTATAG ACTTAATCTG GTTTCTCTAA 20301 TTTTTCACT AATGTTCTTT TTCTGTTCTA GGATCTAATT CAGTATACCA 20351 TATTGTATTT AGTTGTAGGC CATGTTAGCC ACCTTCAATC TGTGACAGTT 20401 TCTCAGTCTT TCCTTCTTTT TCGTTATCTT GACAAGTTTG AAGAGTGCTG 20451 ATAGGTATTT TATAGAATGT CCGTCAGTTG TCTGTCAGTT TGTATTTGTC 20501 TGATGTATTT TTTTTTTTT TTTTGAGATG GTGTCTCGCT CTGTCGCCTA 20551 GGCTGGAGTG CAATGGCATG ATCTTGGCTC AATGCAGCCT CCACCTCCGG 20601 GGTTCAAGTG ACTGTCCTGC CTCAGTCTCC CAAGTAACTG AAACTACAGG 20651 CATGTGCCAC CACGCCTGGC TAATTTTTTG TATTTTAGTA GAGAAGCAGT 20701 TTCACCGTGT TGCCCAGGCT GGTCTCGTGC TCCTGAGCTC AGGCAATCCA 20751 CCCGCATTGG CCTCCCAAAG CGCTAGGATT ACAGGTGTGA GCCACCATGC 20801 CTGGCCAATA TTTTGAGGGA TATACTTTGG TGAGGTCATG CAGATATCCT 20851 GTTTCTCCTT AGTTTTATCG ATTAATTTAG CATTTATCCA GTAAATCTTC 20901 CTTGCAGCAA TTATTTTTC TTTTTCTTTT TTCCTTAATT TTTTTTTAA 20951 GAGATGGGAT CTCACTCTGT TGCCCAAGTT GGAATGCAGT AGTGAGTTCA

FIGURE 3G



Docket No.: CL001196
Serial No.: 09/820,003
Inventors: MERKULOV, Gennady et al.
Titl: ISOLATED HUMAN RAS-LIKE PROTEINS...

21001 TAGCTCACTG CAGCCTCAAA CTCCTGGGCT CAAGTGATCC TTCTGCCTCA 21051 GCCTCTCAAG TAGCTGGGAC TACAGGCATA GACCACCACA CCCAGCTAAT 21101 TAAAAAAAT ATTTTTAGAG ATGGGGGTTT TGCTATGTTG CTCAGGCTGG 21151 TCTTGAACTT GCTGGCCTCA TGTGATCCTT CTACCTCAGC CTTACAAGTA 21201 GGTGGGAATT ACAGGTGTGA GCCACCACAC CCAGCATTGC AGCAATTATT 21251 AATGTAGTGC TACTGGTCAT TTTCTGTTTT TCTCATTTCT TCAGCATGTG 21301 TTATTGACTT GTCTCTTCCC TCCCATTTAT AATCATTTAT ACTGCTATGA 21351 ATTCATGAGT ATTTATTTTG TGAGTTATAA TCTAATACGT ACTTAATTTA 21401 TTTTGTGCCT CAAATTGTTC TGGCTTGGCC ATTTTTTTTT TTTTTTTTG 21451 AGACGGTCTC GCTCTGCTGC CCAGGCTGGA GTGCAGTAGC GCCATCTCTT 21501 CTCACTGCAA CCTCCACCTC CCGGGTTCAA GCGATTCTCC TGCCTCAGCC 21551 TCCTGAGTAG CTGGGACTAC AGGCGTGTGC CGCCACACCC GTCTAATTTT 21601 TTGTATTTT AGTAGAGACA GGGTTTCACC ATGTTAGCCA GGATGGTCTC 21651 GATCTCCTGA CCTCGTGATC TGCCCGCCTC AGCCTCCAAA AGTGCTGGGA 21701 TTACAGGTGT GAGCCACCAA GCCCGACCGG CTCCTGTATC CTTTTAACAT 21751 GAGGTGCTGT CATCATTTTT TCCCCCTAAT ATTTTGGCCA AAAATGTTAA 21801 TCAAGGATGG CACAAATTTT CTGTAGCTGT ATCTCACAAT GAAAGAGGCC 21851 TGATTAAAAA TGTAAAACTA AAATGTTCTC TGATCTCTTA GCACATGCTT 21901 TGTAAAAGGC ACAGTGCTAG ATCCTTGTAT ACGTAGATGA GTAAGTCAGC 21951 TTACCTTCCA CACCCACAGA TAGCTATGTC AAACGTAAGG GTGGAGAAAC 22001 ACAGACCCCA AACTTCTCGA GGGTAGAAAA TATGAGGTTA TAGTAGATTA 22051 GAACTACAAA AAGCTAGAGG AAGTTCTGAA CTGGAAACAG TGGATAGGAT 22101 TTACTAGAAT AATTTACGAG GGTGACAATT GTAAATCTTC ATAGGTTTCT 22151 TTTTTTCCT TTCTCTTTTT TTTTTTTGA GATGGAGTCT CGCTCTGTTG 22201 CCCAGGCTGG AGTGCAATGG CGCAGTCTCT CCTCACTGCA ACCTCCGCCT 22251 CCTGGGTCCA GGTGATTCTC CTGCCTTAGC CACCCAAGTA GCTGGGATTA 22301 CAGGCATCTG CCACCATGCT GAGCTAATTT TTGTATTTTT TTTTTTAGTA 22351 GAGACGGGGT TTCACCATGT TGGTCAGGCT GGTCTTGAAC TCCTGACCTC 22401 AGGTAATCCA CCCACCTTGG CCTCCCAAAG TGCTGGGATT ACAGGTGTGA 22451 GCCACCGCGC CCAGCCAAAT TTTTATTGGT TTCTAAACTA GCGTAATTTA 22501 GTTTTTTCA CTTAAGTCAA AATTATATTA TTGTAGGATA AAAACTTAGT 22551 GATCCAAATT CATGAGGAAT GAAGAATAAA TACATTTAAA GTCTTACCAT 22601 TTGCTAAATT AGTCTTGGCT CTTTGTACCA AAATTCTGTC CTTGTGCTCT 22651 GTAATTTTAT ATTTGTATAT TTTCTATCAA CATTTTTACT GTGTGGTGTT 22701 TTGTAAATTA TAAAAACGTT TTAAAGCAAA CTCAGAACAA TGAATTCTCA 22751 CGAATATTCA GTATATTTAC AGTTGAGAAA TAAACTACTT CTGTAGTAGG 22801 TAATTTAAAA TGTCCCAATG CAAGTTAACG TGTCACTGAT CACGCTATTC 22851 AGGTGTGTGT CTTTGATAAG GGGAGGTGGG GAAGTTTGTG GGTTTGATTT 22901 TATTTGCCTT TCTCATGTGA CTGTTGTCAT GTTAGTAAAC AAATGGTTTG 22951 CGAGAGAACC AGTAGTCTTT TGCAAAGATT GTCTTATACA GAGCACTCAA 23001 TTCTTCATAT TATTTATAAT GGCTTTAATT TAAGCCTTAA ATTATTAGAA 23051 ACTCATAAAT AATTTTTTA TTTGTTTTTT TGAGATGGAG TTTCGCCCTT 23101 ATTGTCCAGG CTGAAGTACA ATGATGTGAT CTTGACTCAC TGCAACCTCC 23151 GCCTCTCGGG TTCAAGTGAT TCTCCTGCCT TTGCCTCCCA AGTAGCTGGG 23201 ATTACAGGCA TGCGCTACCA TGCCTGGCTA ATTTTGTATT TTTAGTAAAG 23251 ACAGGATTGC ACCATGTTGG CCAGGCTGGT CTCGAACTCC CAACCTCAGG 23301 TGATCCACCT GCTTCGGCCT CCCAGAGTGC TGGGATTACA GGCTCACTGA 23351 GCCACTGTGC CCAGCCATAA TGCGTTAAAA TAAGAGTGTT ATATTTGTAA 23401 AACTTAAAAA AATGTAGTGG TTGAAAAAGG TAATTTAAAA AGAATTGACT 23451 ATTAATTTCT TGAAACCATA ATGTAACTTG TAGTGCAATT AGGAAACCTT 23501 CATGTTTCTT TCTTTCTTTC TTTTTTTTT TTTTTGAGAT GGAGTTTTGC 23551 TCTTGTTGCC TAGGCTGGAG TGTGTGATGT CAGCGCACTG CAACCTCTGC 23601 CTCCTGGGTT CAAGCAATTC TCCTGCCTCA GCCTCCCGAG TAGCTGGGAT 23651 TACAGGCGCC TGCCACCACA CCCAGCTAAT TTTTGTATTT TTAGTAGAGG 23701 CGGGGTTTCA TCGTGTTGGC CTGGCTGGTC TCGAACTCCT GACCTCAGGT 23751 GATCCACTGC ACCTGGCCCC CGTTCATGTC TTTTAAAGCT TTATGGTTGC 23801 TCTGAAATAG AGTTGTTGAT TTTTTTTTT TTTTTGAGAC TCCTCTTTTG 23851 CCCGTGCTGG AGTGCAGTGG TGTGATCTGA GCTCACTGCA ACCTCCACCT 23901 CCTGAGTTCA AGCAATTCTC ATGGGTCAGC CTCTCAAGTA GCTGAGATTA 23951 AAGCTGCCCA CCACCATGCC TAGCTAATTT TAGTATTTTT AGTAGAGATG

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FIGURE 3H



Dock t No.: CL001196 S rial No.: 09/820,003 Inventors: MERKULOV, Gennady et al. Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

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24001 GGGTTTCACC GTATTGGCCA GGGTGGTCTG GAACTTCTGA CCTCAGGCAT 24051 GAGCCACTAC GCCTAGCCTG GGTTGTTGAT CTTTAAGGTG ATACTTCAGG 24101 CAACATCTGA GGCCCAGTAC AGTCCTTTAC TTCAACTGGC TCCAGTACAG 24151 CAAATTCAGG GAATGTTTTT GAGTGTTTAC TGGATGCCTG GCGTGGAGTT 24201 CAGGGAGATT GGTACATTGA GTCCAGTTGT TGTGTTGAAA CTTCTGTTTA 24251 AAAACCTCCC TACTAAGTCC CAGCTACTCA GGAGGCTGAG GCCTGAGAAT 24301 CACTTGAACA CCTGGAGGCA GAGGTTGCAG TGAATCGAGA TCGAGCCACT 24351 GCACTCCAGC CTGGGCGACA GAGTGAGACT GTCTAACAAC AAAAACAACA 24401 CCCCCAAAA AACCAACCTA CTATGGTAGT ATCAATGCTG TGATAGTCTT 24451 CCTTTCTTCA TACAGGTAAA TTCTTAACAT ATACTCATTG TTAATGTTCA 24501 GTGTTCAGTA TTCTTAAGAG TATTTGGGGC CAGGCACGGT GGCTCATGCC 24551 TGTACTCCCA GCACTTTGGG AGGCTGAGGT GAGCAGATTA CCTGAGGTTA 24601 GGAGCTTGAG AACAGCCTCC AACATGATGA AACTCCCGTC TTTACTAGAA 24651 ATACAAAAT TAGCTGGGTG TGTTAGCACA TGTCTGTAAT CCCAGCTACT 24701 TCAGAGGCTG AGGCAGGAGA ATTGCTTGAA CCTGGGAGGT GGAGGCTGCA 24751 GTGACCTGAG ATTGCTTCAC TGCACTCCAG CCTGGGCAAC AGAGCGAGAC 24801 TCTTGTCTCA AAACAAACAA ACAAAAAAG AATATTTGGG GCCAGGCATG 24851 GTGGCTCACA CCTGTAGTCC CAGCACTTTG GGAGGCCAAG GTGGGTGGAT 24901 CACTTGAGAT CAGGAGTTGG AGACCAGCCC GACCAACATG GCTAAATCCC 24951 GTCTCTACTA AAAGTACAAA AATTAGCTTG AGCAACAGAG CAAGACTCTG 25001 TCTCAAAAAA AGAAAGAAGA ATATTTGGTT TAATTAAGAA GGAACCTTAT 25051 CAATAGTAGT AAAGTCAGCC AGCTGAACTG CCAAGTACAA ATTGTTGGTA 25101 TTAGGTATCA ATCATTTATT AAGGATAATA TTCTACAATA GCGATCTTTT 25151 TAAAAATTTT AAAATCTCAA ACTGGAAAGG ATGTCTAGTT CATTCTATGC 25201 TTCAGTCCCC TCTTCTGATT TACTTGTTTA GAAGATTTTT GTTTCCTTCT 25251 CTGACTTCTA TTTTGCTGCT GACTGGCACT TGGGATTTTT AAAAAATTAT 25301 TTTCCTCATA TATAATTAAA GACAATAAGT ATAACAATAA GTATAATATG 25351 GTAATTTGCT AAAACCCAAA CAATGTTTTA AGTAATGCAT ATCATTATGT 25401 AAACCTACGT AATAGTTGAA TATTCACAAA GATAATCGCT TATAGAAGTT 25451 TTATATCCTC TCTTCTTTGG CAGTGCAATT AAAACAAAAA AAATAAGTTT 25501 TATGTCTTGT TTACATGTAA ATAATTTTAA TCTAAATTGT GACGTGGTTT 25551 TCACTTTAGC ATATTTTTGA AAGTAAATCA AAAAGGACAA AATACAAAAT 25601 CATGTATATC TTCTACAAAA ACGATATATA AATTCTAAGG TTTTTGTCCT 25651 TTTGAAATTG CTTAAAAGAA TGCATAGAAC TGGTGTCTGA GTTGGGAAGG 25701 ATCTATGAGG GATTTCCTTG GAGACCGTGG GTGAATAATA ATGTTGTCTT 25751 AGTTCCATGA AGGAATCTCT GGGGATAGTT TTTGAGTTAG GCCTGGCAAT 25801 GTTAGAGATA CATAAAGAGA GCCTTGTTTT ATCACTGGGT GCGGTGGCTC 25851 ACACCTGTAA TTCCAGCACT TTGGGAGGCT GAGGCGGGCA GATCATGAGG 25901 TCAGGAGATC GAGACCATCC TGGCCAACAC GGTGAAACCC GTGTCTACTA 25951 AAAATACAAA AATTAGCTGG GCGTGGTGGC GCATGCCTAT AATCCCAGCT 26001 ACTCGGGAGG CTGAGGCAGG AGAATCACTT GAACCAGGGA GTTGGAGGTT 26051 GCAGTGAGCC GAGATCGCGC CACTGCACTC CAGCCTGGGT GACAGAGCAA 26101 GACTCCGTCT CAAAAAAAA AAGCTTGGTT TTCAATGGTT CTGAAAAATG 26151 CTTTAATACA AGTGTAGAGT GTTAGTCAAG TTTTGCACTT GGATAAACAG 26201 CCTGTGAATT TATCACATTT CTAGTTTATA ATATGGGCTT TCAGAAGTTA 26251 TATGAACATT GTTTTGACGG GAGAATTCAA GCTGGATGCT AGAGAAGGAT 26301 CGTGAGAACC CCTTCATTGG AGGAGTGCTA TGAAATTATT TGATCTTGGA 26351 ATTTTTTTT TTTTTTTT TTTTTTTT TTTTTTGAGAC AGAGTTTCGT 26401 TCTTATTGCC CAGGCTGGAG CTGGAATGCA GTGGCACGAT CTCGGCTCAC 26451 TGCAACCTCT GCCTCCTGGG TTCAAGCAAT TCTTCTGCCT CAGCCTACCA 26501 GGTAGCTGGG ATTACAGGCA TGCGCAACCA TGCCCAGCTA ATTTTTGTAT 26551 TTTTAATGGA GACGGGGTTT CACCATGTTG GTCAGGCTGG TCTTGAACTC 26601 CTGACCTCAA GTGAACTGCC TGCCTCAGCC TCCCAAAGTG TTGGGATTAC 26651 AGGTGTGAGC CACTGCGCCT GGCCTGATCT TAGAATTTGA AGGAGAGACT 26701 AATATTCAT GGGCAAAAAC AATGAAAAGT TACCTTTCTG TATTCTAATA 26751 CTATAGAGGA GTGGGATTTA TTTAGAATGT TTTAAGTATC TTGGGCAGTC 26801 CAAGAGTGCG TATCACTTAT TTTTCTTTTC CTTCTTTCTT TTTAAGTGGA 26851 AGTTCACTGA TGTTAGAGAT CATAGGTGGC ATTGCCTACT TTTTACATAA 26901 TTTTATCATG TTTAGTGATC TGTCAGAAGG GCTGTGGCTG TTTGCAGTTT 26951 TGGCTTAAGC CATGCATGGG CTTTATAGGA GATGTAGTCT TCACAGTGAG

FIGURE 31



Dock t No.: CL001196 Serial No.: 09/820,003 Inventors: MERKULOV, Gennady et al. Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

	mmamma mmma	ma comomomo	mmmammmma	mama commam	3.003.3mgg3.0
		TAGCTGTGTT			
		ATTAACATCA			
		TTCTGATTGG			
		GCAGTAAGTT			
27201	CAATTAATGC	TATGTATGTT	TTCTAGGTAG	ATAAAATTAA	ACAGTTTTAT
27251	TCAGAATAAG	TTAATTCTTC	CAGAATTTAT	ATATTTAAAG	ACTCCAAATA
27301	TACATCCCCA	GTGGTATCTT	GGACTGTTAA	ATAGAAAAAT	ATTGTTGCTC
27351	TTAAAAGAAA	TTCAGTGAAG	TCTGGTTATA	AAGTCAGAAT	GTCTAATACT
27401	TTTGGTCAGA	GTCAAACAGC	AGTTCCAATA	TAGGCAGCAA	GTTAAAGGGG
		CCTGTGTTGA			
		TAGAATAAAA			
		AGTCTCAGCT			
		AGTTTTGAGA			
		AAAGTTAATA			
		GGCATAGTTC			
		AGAATCCACA			
		ATGTTTCCTG			
		GGAGGCCGAG			
		CTAACACGGT			
27951	ATCAGCTGGG	TGTGGTGCCA	CACGCCTGTA	GTCCCAGCTA	CTCGGGAGGC
28001	TGAGGCAGGA	GAATCGCTTG	AACCCAGGAG	GCGGAGGTTG	CAGTGAGCTG
28051	AGATGGTGCC	ACTGCACTCC	AGCCTGGCAA	CAGAGCAAGA	CTGTCTCAAA
28101	AAAAAAAGAA	AAAAAATAAA	AAAACAAATT	AGCATGTTTC	CCTTCTAGAG
28151	ATCATTGTTT	CTCAGAGCAT	GGACCAAAGA	CTCCTGGGGG	TTACCAAGAC
		AGCCCATGAG			
		AGGAAATATT			
		TCAGTGATGA			
		TGGCTTGGTA			
		GATGGCATTC			
		CATTTTTATT			
		TGAAAAATGT			
		GGGAAGTTCA			
		TTTTGAGACA			
		TGGCTCCCAG			
		GACCTCCCAA			
		TGTAGTGACA			
		GCTCAAGCGA			
		TTTTACTGCA			
28901	AAAGAAAAGC	ATTTGTAGTT	TTTTGAGTTG	TAAGCTGAGC	TAACTGCTTT
28951	ATTTTTTTCT	GTGGAACACC	ATTTCTTTTT	TTTTTTTGA	GATGGAATAT
29001	TGCTTTGTTG	CCCAGGCTGG	AGTGCAGTGG	CACAATCTCG	GCTCACTGCA
29051	ACCTCCGCTT	CTCGGGTTCA	AGCAATTCTT	CTGCCGTAGC	CTCCCAAGTA
29101	GCTGGGATTA	TAGGCACCTG	CCACCAAGCC	CAGCTAGTTT	TTGTATTTTT
29151	AGTAGAGATG	GGGTTTCACC	ATGTTGGCCA	GGCTGGTCTC	GAACTCCTGA
29201	CTTCGTGATC	CGCTTGTCTC	AGCCTCCCAA	AGTGCTGGGA	TTACAGGCGT
29251	GAACTACTGC	ACCTGGACAT	TTTTTTTTT	TTTTTAACTT	GAAAGAACAG
		GATTAGAACA			
		AGTCATTTCA			
		TAAGTTTATC			
		TGACAGTATC			
		GAAGGTTATT			
		GTTAAAAATA			
		TCTTGGTTTG			
		TGCTAAATTT			
		AAAACTAATG			
		CATATAAAGC			
		GAAATAGTGG			
		ATTGCTGGCT			
		GGCTGAGGCT			
29951	CCAGCCTGAC	CAACATGGAG	AAACCCTGTC	TCTACTAAAA	ATACAAAATT

FIGURE 3J

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30051 GGCAGGAGAA TTGCTTGAAC CCAGGAGGCG GAGGTTGTGG TGAGTCGAGA 30101 TCGCACCATT GCACTCCAGC CTGGGCAACA AGAGCGAAAC TCCATCTCAA 30151 AAAAAAAAA AAAAAAAAA AAAAGGAAGT AATACAAATT GCCAATAAAT 30201 ATGGAAAAA AAAAAGGCTC AACTTTATTT GTAATTAAAG GCCTTTAAGT 30251 TAAACTTAGG TGTCATTTAA TTTTTATTAA ATTGGCAAAT ATTAAAATTA 30301 AGCATAATTC TTAAGCAACT CTCGGTAGGT GGGAAGAATC TAGCTGTAGC 30351 CTCAGGTGTT TGTGCCTCAA GGAAAACCCT CTCTGGGATG TCCATTGCTT 30401 GAAGTCAAAG GTTTTCCAAT AATACCTGGA AACTATTTTT AAAATGCTGA 30451 TCCCCATACC CTCAAAATAT TAATAGAGAC AATCGTGAGG ACTATAATAA 30501 AGAAATGTGC AATAAGCTCT GGGGGCACAG AGGGAAGAAT CTATTGGCTG 30551 AGGAGTTGAA GAAATTGTTT GGACACTCAG TATTGCCTGA GCTCAAAACT 30601 GAAGGATGAA TAAATGCCAC ATGACCTTGG GGCTGGGGAG TAAGTAGGGT 30651 TATGCAGAGA GAGATAACTG AGGCTTTTGG GCAGACGAAT AGTAACGGCT 30701 CAGGCATGGG AGTAAAGGTC ATTTAGAGAT TTACAAGAAT TCAGCATTTC 30751 TTTCTTTTC TTTTTTTTT TTGAGATGGA GTCTAGCTCT GTCATCCAGG 30801 CTGGAGTACA GTGGCATGAT CTCAGCTCAC TATAACTCCC ACCTCCCGGG 30851 TTCAAGTGAT TCTCATGCCT CAGCCTCCCG AGTAGCTGGT ATTACAGGCG 30901 TGTACTACTG TGCCTGGCTA ATTTTTGTAT TTTTAGTAGA GATGGGGTTT 30951 CACCATGTTG GTCAGGCTGG TCTCCAACTG CTGAGCTCAA GTGATATGTG 31001 CACCTCTGCT CCCCAAAGTG CTGGGATTAC AGGCGTGAGC CACTGTACCC 31051 GGCCAAGAAT TCAGTATTTC TATCCAAGTA CCTGGGGGAT AGATGTGCTA 31101 CATGAATATT TATTGCATTC ATTTTGTTCT CTGCATTTTT TTTTTTTTT 31151 TTGGTTTGAG ATGGAGTCTC GCTCTGTCGC CCAGGCTGGA GTGCAGTCGT 31201 GCAATCTCGG CTCACTGCAG CCTCCACCTC ATGGGTTCAA GCGATTCTCC 31251 ATCTTGGTCT CCTGACTAGC TAGGTTTACA GGCGTGTGCC ATCACACCCA 31301 CTAATTTTTT GTATTTTTAG TAGAGACAGG GTTTCACCAT GTTGGCCAGG 31351 CTGGTCTTGA ACTCCTGATC TAAAGTGAGC CTCCCACCTT GGCCTCCCAA 31401 AGTGCTGGGA TTACATATGT GAGCCACTGC GCCTGGCCTC TATATACTTC 31451 TATAGTACCT GATACTTATT AGGCACTCAA TTACAACATA ACTTTTTTT 31501 TTTTTTTTT TTTTGAGACA GAGACATGCC TTGTCGCCTG GGCTGGAGTG 31551 CAGTGGCACA GTCTCGGCTC ACTGCAACCT TCACCTCCCG GGTTCAAGTG 31601 ATTCTCCTTC CTCAGCCTCC CGGGTAGCTG GGATTACAGG CGCCCGCCAC 31651 CACGTCCAGC TAATTTTTTG TATTTTTAAT AGAGATGAGG TTTCACCATC 31701 TTGGCCAGGC TGATCTCAAA CTCCTGACCT TGTGATCCAC TCACCTTGGC 31751 CTCCCAAAGT GCTGGTATTA CAGGTGTGAG CCATCATGCC CGGCCCATAT 31801 TTCTAAAAAC ATTTTCTTAT AAAATGACAT TGCCATTATC AACCTGCAAA 31851 ATACATTTCC ATTTGGTTGT TTTCTTGCTT AGTCTTTTAA TCTAGAGTTT 31901 TATACCTTAT CTTTTTTATT TATATATTTT TTATGTCATT GACTTTTTGC 31951 AGAAACTGAA GCACTTGTCC TGTAGATTGT CCAATATTCT AGATTTGTCA 32001 TTTTGTTTCC TTGTGATGTC CTTATGCTTA TTTGTTTGTC CCTCTTTCTG 32051 TAATTAGAAG ACCTAGAACT GCACTATCCT TAGAGTAGCT ACTAGCTCTA 32101 TGTAGCTATT TAAATTTAAA TTAATTAAAA TTGAAAAAGT TTGGTGGCTC 32151 ACACCTGTAA TCCCAGCACT TTGGGAGGCC AAGGTGGGAG GATTGCTTGA 32201 GTGCAGGAGT TCAAGGCTTC AGTAAGCTAC GATTGTACTC TAGCCTGGGA 32251 GACATCAAGA CCCTGTCCCT TTAAGGGGGA AAAATAATTG AAAAAATCAA 32301 AAACTTAGTT TCCTTGTTTC ACAAGCTGCA TAGGGCTAAT GGCTACCATA 32351 TTGGCTAGCA CAGCTTATAG AACCTTTCCA TTGTCACAGA AAGTTCTGTT 32401 TGGCAGTGCC GTTCTCATTA GACCTGATTC GATTAAGGTC CATCTTTGTT 32451 GACAGAGTAC TTCTTAGGTG GTGCTTTGTG GTTCATATGA TGATAGCCTG 32501 GTCTGTTCAT TCATATATCT TTTCACGAGA AATATTTTTA TTCCATTCTG 32551 AATAAAATTT CATGGCAGGT ACTTGCAAGA AGCAGTTATA ATTTTAAAGT 32601 TTAACATTAG GTTAAAAAAT TGACAGGAAA CATATATTCA CAGGTAAAAC 32651 TTGTACACAA ATGTTCATGG CAGCATTATT CATAATAGCC AAGAAGTGGA 32701 AACAACCCAA ATCAATTTAT GAATGGATAA AATGTTGTAT ATTTGTAGTA 32751 CATGTAATAT TATTCAGCCA ATAAAATGGG CCAGGCATGG TGGCTCACAC 32801 CTGTAATCCC AGCACTTTGA GAGGCTCAGG CAGGGGGATC ACTAGAGGTC 32851 AGGAGTTTGA GACCAGCCTG ACCATCATCA CGAAACCCTG TCTCTACTAA 32901 ACGTACAAAA ATTAGGCAGG CGTGGTGATG CACGCCTGTA GTCCCTACTA

32951 CTCAGGTGGC TGAGTCATGA GGATTGCTTG GACCCCGGGA GACAGAGGTT

FIGURE 3K

Docket No.: CL001196
Serial No.: 09/820,003
Inventors: MERKULOV, Gennady et al.
Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

TECH CENTER 1600/2900

33001 GCAGTGAGCT GAGATCATGA CACTGCACTC CAGCATGGGC AACAGAGCAA 33051 CATCCTGCCT CAAAAAAAA AAAAAAAAA AAAAGAAGTA CTGTTACATG 33101 GTACAACATG GATGAACCTT GAAAACATTC TGCTAAATGA AGGAAGACAG 33151 ACACAGAGGG CCACATATTT TATGATTCCA TTTATACGAA ATGTCCAAAA 33201 TTGGCAAATC TAAAGAGAAA GTAGATTAGT GGTTGCCAGG GAGTGAAGAC 33251 GGGTTCTTC TGGAGTGAAG AAAATGTCCT GGAATTCGTG GTTGTAGTTT 33301 GCAACCTTGT GAATGTATAA GGACCACTGA ATTGTCCACT TCAAAAGGGT 33351 GACTTTTATG TTATGTGCAT TATATCTAAA AAAAAATCA TAATTAGGAA 33401 GCAAGATTGA CTTCTAAGAA AAAGCGGAGT GAAATTGTTG TTTTGTGGTG 33451 AATAAATTGG GTGGGTGGGT CGCAAGAGTT TTGCTGATTA GTGATTAGAA 33501 AAATTATTCA TAATCATTGA AAATATAAAA TATTTTTCTA TATGATGTAT 33551 GTAAAGAATT TGGCAAGAGA TGATGTTTGG AAAAAATAAA GAATGGCTAT 33601 TGTAGAGATC TTAAGGAAAG AAACTACAGT TAAGTAGTGC TTTGTAATCA 33651 GAATATGAAG TAAGTACTGA AAGTGGATGG AGTGGCTGTT GTCAGCATGT 33701 TATACTTTAT ACATTTCATT CATAAATTTG GACTGTAGAT AAAAGTAAAC 33751 TTTTTTTTA TTTACTCTTG AACAACAGTT TTTTTTTTC CACTTAGACT 33801 TGCATCTGCT CCACTGAACA ATACATTTAA TTGTTAATTA TTTCCCCCTT 33851 CAGGATGATA CATATACAGA AAGCTACATC AGCACAATTG GTGTGGATTT 33901 CAAAATAAGA ACTATAGAGT TAGACGGGAA AACAATCAAG CTTCAAATAG 33951 TAAGTGACTT GGCTAGTAAT TTTTTTGAAA TTTATTTTGG TAAATTTGTA 34001 ATGTATTGTT ATTTTGTATA TATTTACTAT GCTAACAAAA TTGAATGTAA 34051 AATGTCTTAA GATTCATGTA CTTAAGATAG AATGGTAGAA TAAGAATTAC 34101 TTAGATTAAA AATAATATTT TCAAGATTAC TTAAGCCTCA TTGAATTTTC 34151 TGTTCATGAA GCAGAGAAAC TCATGTTTTA AGTCAAACTT GGTCCTCATC 34201 TTTTTCTTTT ATCAGTGGAA ATCTAAGTTC AAGTTTACCT TGTCCTACAC 34251 TGCAAATGTT ATAGACCATT TTTGTTTGTC TTTTACTGTG CTAAGTGCAT 34301 GGAACATTAA AGGAACCCTA GGAAGAGATT CTTCATATGT GGCTCAGTTG 34351 AAGAGAAGTA CTTATGTAGT TCTAAGTATT TTTATTAGAT AGTGTGCACC 34401 AACTCTGTAG AAACACAGAA TTTTGTTGGA AAAAGGAACT TAGTTTTTGT 34451 AACATGTTCA TTTTACTGCT CAAAAAAACG AATGCTGAAA GATTTAATGA 34501 CTTGCCTACA GTTACTGGTA GAACCAAGTG ACCGAAGCTC TGTCTTCAAT 34551 ATTTTGTGTC TGTGTGCCAT CCTATCCCCC TTATCCATCT TTACACCCCC 34601 AGCCCCCAAT TAAATATAGG CAATTATAAT AGTTCAGTTG TGCCTCTTCA 34651 GTATGGGTCT GAGTCCTGTC AGTGTGGGCA TATCTGTGGT CTTTTAAAAA 34701 ATAAATCTCT CAGTATTTTT CAGAGTAGGC TATTAGCAAG AAGTAGGCTA 34751 TAAACACAGG AAACCAGTGA CTGCCCCTTT TCATGGAACT GATGACACAT 34801 GGAATTGGAA GGAGTCCTGC ATTAGGAGTC AGAAGACTTA GATTTGTTGT 34851 CTTGGTTCTA GTATTTACCT GTTAGAGAAT CATGGGTTTG TGTCTCTGGG 34901 GAAAAGGCCG AAGTAACCCT GAGACCCAGT TTCCTTTCTA AAATGTGTGT 34951 GATGACACCT GATTTACTAA TTTATAAGCT AGTTGTGAGA ACCAACTGTA 35001 ATAGCTTTGT GTATGTGACA ATACGTGTGA AAGCCCTTTG TAAACTTTTG 35051 GGCAGCATAT AGATACTACT TATGATATGA CATGCCCAGA TAAATGGGTG 35101 TTTGATAGGT TAAGTTGCTC CCTTTTCTTA CATGACTCTG ATGAGGAAAA 35151 GAAGGTATGT TAACAAAGA TAGGTGGCTG TGGATATTGA TATAAGTAAA 35201 CACACTTGAT GTGTCAAATT AGGACTTGCA AGGATTTAGT TTTCAGAAAT 35251 AGCTTGAAAT ACTTTCAATC AGTGAACAAA TTACCCTCCA TATTTTTTCC 35301 CACGATATAA GTACAGTCTC AACCTTTTAT TTGGCACCAT AAAGAGCACA 35351 TAAAGATCTA CCCAAAACTG TACTTTAAAG CACTGGTATG GAATAATTGT 35401 ATTATGTGTG ATCATTGGTG TTTATAAGAT TTGGGTGTGT ATTCGTGTGT 35451 GAAACATTCA TATTTTGTTA CTTTCCTGTG GCTGGAAGGG ATCTTATAGG 35501 ACACTGTCTT TCATCTTTGT CTGTCTTTCA TCTTTAATAG GAATTTCTTT 35551 TCCATGCCTG AAGGCCTCAT TTTGAACATT TTGTTTGTTT GTTTTTTAT 35601 TTTTTGAGAT ACAGTATTGC TCTGTCTCCC AGGCTGGAGT GCAGTGGCGC 35651 GATTTGAGCT CACTGCAACC TCCGCCTCCT GGGTTCAAGT GATTCTCCTG 35701 CCTCAGCCTC CCTAATAGCT GGGATTACAT GTGTGTACCA CCATGCCCGG 35751 ACAATTTTT TTTTTTGAG ATGGAGCCTT GCTTTGTCGC CCAGGCTGGA 35801 GTGCCAGTGG TGCAATCTTG GCTCGCTGCA GCCTCCGCCT CCCAGGTTCA 35851 AGCAGTTCTC TTGCCTCAGC CTCCTGAGTA GCTGGGATTA CAGGCGTGCG 35901 CCACCACACC CTGCTAATTT TTTGTATTTT TAGTAGAGAC AGAGTTTCAC 35951 CATGTTGGTT AGGCTGGTCT CGAACTCCTG ACCTCGTGAT CTGCCTGACT

FIGURE 3L

Docket No.: CL001196 Serial No.: 09/820,003

Inventors: MERKULOV, Gennady et al.

Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

	~~~~~~				
36001	CGGCTTCCCA	AAGTGCTGGG	ATTACAGGCA	TGAGCCACTG	TGCCCAGCCT
36051	TCCGATAATT	TTTGTATTTT	TCGTAGAGAT	GGGATTTCGC	CATGTTGGCC
36101	ACCOMMON	СУУУСТССТТ	ACCTCAAGTG	ATCCACCCCT	CTTGGCCTCC
36151			CGTGAGCCAC		TTTTTGAACA
36201	TTTTTAAGAA	GCTTACCATT	TTTTCGAAAT	AGCTAGTTCC	ATTTTACACA
36251	TAACTTCAGC	TAGGCATGTT	GCCTCATGCC	TGTAATCCCA	GCACTTTGGG
36301	ACCCCCACCT	СУСУСУСТСУ	CTTGAGGCCA	CCACTCAACA	<b>TACCTCCTCT</b>
		GTCAACATAG			
36351				TCTACCAAAA	
36401	AAAAAGTAAC	CAGGTGTGGT	GGTCCATGCC	TGTAGTCCTA	GCTCCCCAGG
36451	AGACTGAGGT	GGGAGGAATG	TTTGAGCCCA	GGACTTCAAG	GCTGCAGTGA
36501	GGCAAGATTG	CACCATTGCA	CCCCAGCTTT	GGGGACAGAG	TGAGAGACCC
36551			GCTGGGCGCA		
36601	GTTCACGCTT	ATAGTCCTAG	CACTTTGGGA	GGCCAAGGTG	GGCAGATTGC
36651	CTGAGCTCAG	GAGGTCTAAG	ACCAGCCTGA	GCAACATGGC	GAAACCTCAT
36701	CTTTGCAAAA	CATACAGAAA	AAAACAAAAA	AAACCACAAA	ACCTCTAGTT
			ATTCCTAGTG		TTTTCTTTTT
36801					CAGCGGTCAG
36851	CTCACTACAT	GATTCTTTTA	GAGACATGTT	AATTCTTTAT	ATTGAGCTGA
36901	AGCCTGTTTC	TTTTACTTCT	GTCTCTTCTT	ATTCCTCCGC	CTTGTAGAGC
36951		AGATTAATTC		GGCAAGCCTG	
37001	TGATCTTATC			GAAGTCCTCA	TTCTTTCCTG
37051	TAATGATATT	TTCAGAACCT	TGTGCAATTT	GGGTTATTCT	TACATTTTAT
37101	AAATGCCTTT	TATTAAATTT	GATTTCTTAA	ATCAAGTATG	AGATATAACA
37151	САТСАССТАА	ΔΤΟΟΤΩΤΟΤΤ	GATTTGGAGC	СТСАВТСАВТ	TTCTCTCTTG
	AACTTCAAGG				
37251	TGTTGTTTCA	GTAGCTATAT	TATTTCTAGT	TTGGGTCTTA	AGGTTTTTGA
37301	TTTGCTTGTT	TTTTCTTTTT	TCTTTTTTTT	TTTTTTGAGA	CGGAGTTTCG
37351	CTCTTGTTGC	CCAGACTGGG	AGTGCAATGG	CGTGATCTCG	GCTCACTGCA
37401		CCCAGGTTCA		CTGCCTCAGC	
37451	GCAGGGATTA	CAGGCATGTG	CCACCACGCC	GGGCTAATTT	TGTATTTTTA
37501	GTAGAGATGG	GGTTTCTCCA	TGTTGGTCAC	GCTGGTCTCG	AACTCCCGAC
37551	CTCAGGTGAT	CCGCCTGCCT	TGGCCTCCCA	AAGTGCTGGG	ATTACAGTCG
37601		CGCCTGGCCG		TTTTAATTAA	
37651			ACCCCTGTAA		TTGGGAGGCT
37701	GAGGCAGGCA	GATCTCTTGA	GTTCAGGAGT	TCAAGACCAG	TATGGGCAAC
37751	ATGGTGAAAC	CCTGTCTCTA	CCAAAAACAC	AAAATTCAGC	CAGGCATGGT
37801	GGTGTGTCCC	TGTAGTTCAA	GGTACTCAGG	AGGCTGAGGT	GGGAGGATTG
37851			TTGCGGTGAG		GCCATTTGCA
37901			CGAGACCTTG		
37951	AGGGTCTCAC	TTTACACTTC	TGTGACTGGT	GTTTTAAAAA	TCTAAACACA
38001	GGCCGGGCAC	GGTGGCTCAC	GCCTGTAATC	CCAGCACTTT	GGGAGGCAGA
38051	GGCACGCAGA	TCACAAGGTC	AGGAGTTCGT	GACCAGCCTG	GCCAGCATGG
38101			AATACAAAAA		GCATGGTGGC
38151	AGGTGCCTGT	AATCCCAGCT	ACTTGGGAGG	CTGAGACAGG	GGAATCACTT
38201	GAACCCAGGA	GGCGGAGATT	GCAGTGAGCC	AAGATTGCGC	CATTGCACTC
38251	CAGCCTGGTG	ACAGAGCGAG	ACTCCGTCTG	AAAAAAAAA	AAAAAAATCT
38301	AAACACAAGA	<b>փափար∆</b> Հատասա	AATCCTATCA	ጥጥጥርርጥርጥጥር	СТТСССТТСА
	GTAATCCTTC				TCTGTTGATT
38401	TATATTTTAA	TTATCTTTTC	CTTTCAGCTT	TTCCTGTTCA	GGTGTGACAT
38451	CTGGGTCTTT	ATCTGAGTTT	TATTAGATTA	TAAAACATTC	AGCAAGATAG
38501	GGCAGGTACT	GAGTCCAGTT	GTACACCATG	GAAGGCCTCT	TTCTGTGATT
	GTTCATTCAT				
	AGGTTACAGA				
38651	GAGACAAACA	TGGGAAAAAG	TTACTCTGAT	TATGAGGAGT	AATGAGAATT
38701	ACATATGAAG	GAAAGTATTG	TTAGTACTGT	TAGGATTTAG	TGTCAGGAAA
	GTTTTCAGAG				
	ATGGTGCATG				
	ACTGGGTGAT				
38901	GCTGAGGAGG	CCTCAGGAAA	CTTACTGTGG	CAGAAAGGGA	AGCAGGCACG
38951	TCTTACATGG	CAGGAGGCGA	GAGAGTGTGA	AGGAAGTGAA	GGGGGAAGAG

FIGURE 3M



Docket No.: CL001196 Serial No.: 09/820,003 Inv ntors: MERKULOV, Gennady et al. Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

			TCTTGTGAGA		
39051			AATCCAATCA		
39101			TGAGATGAGA		
			AGTCCCAGTT		
39201	GGAACACTTG	AGCCCAGGAG	TTCAAGATCT	GCCTGGGCAA	CATAGCAATA
39251	CCTCCATTTT	GGATAAAAAG	GAAATTTTAC	TTTTTGGGTG	CCATTGCTTA
39301	GTTTAATCAG	CTGTAACTTC	TTGTTGACTT	TTAGTCAAAA	AACAATTTTT
39351	CCTTCTATCT	TTGTGAAAGA	GGTTGGTGAG	CAAGGAAGAA	AAGGAAACTT
39401	GCTTTATTGA	GCAGCTTCTA	TAGTCAGGCA	CATTTTACAA	ACATTAGTTC
39451	ATTTAAACCC	CTTTAGCTGT	TGTACAAGGT	GAATGCTATC	TAGCATTTAC
			GACTCTCCCT		
			TCAGGGTAGC		
39601			AGACTTTGAG		
39651			GCTCTCTTGC		
			GCCTCCTGGG		
			ACAGGCGCAC		
			AGGGTTTCAC		
			CCGCCCGTCT		
			ACCCAGTCC		
			AGCATTTGTT		
			TTCTTAAAAT		
			TTTCTCTAGC		
			TAATGCCAGC		
			AATTTGAGAC		
			GAAAAAATTA		
			GGAGGCTCAG		
			AGCCATGATC		
			CTTGAGAGGG		
			TTGACTGGTA		
40451	CCAGTGCTTT	TAATCATGGT	AGAATGTGCT	AGCAAGTGAG	TTTGTCTTAC
40501	ATGGAAGAGT	TCTGTGTTCA	AGGGCTTTCG	GCCAGTGGCA	TTCCTAAACA
40551	CAGTGTTAAA	GGCGGTAGGG	AATGTGAAAA	GTATGACATA	GTTCCTGCTC
40601	TCAACAGCTT	GTAATTTTAG	TATTATTATC	GTAAGCTCAA	TTGTAGGTAC
40651	TACTTCTTTT	CTGGACTTTC	AGGTGCTTAT	TACCGTGCAA	TTTAGTGGTA
40701	TGAGTTGAGG	ACTAATGTTT	CTATATCACA	TCCTGATAAT	CTCCACAGTT
40751	ATGAAAACTA	AACTATTTCC	CCTCCCTCCT	ACACTTTTCC	CCAACTTTAT
40801	TTTAATGGAA	TTGTTTGGAT	TTCTTGATTG	TTTTGTAATA	GTGGGACACA
40851	GCAGGCCAGG	AAAGATTTCG	AACAATCACC	TCCAGTTATT	ACAGAGGAGC
			ATGATGTGAC		
			CAAGTAGGAA		
			ATATAAGCCA		
			AATATAAATG		
41101			AAGATTAGTA		
			TATTGTCAAC		
			GCAAGAGTTT		
41251			GTGTTAAGTA		
41301			GAATTGCCAA		
41351			CAGAAATAAA		
			GAATGAGTAT		
			ACAATGTGGG		
			GTTACTATTT		
			AAGAAAAGGA		
			GGCAAATGTT		
			TAACTTACAT		
			GTGATATCTG		
			TTACCGTGAA		
			TGGAAAAGAA		
41851	TCTTTTGACA	TCTCTAGTAG	TAACAGTAGG	${\tt TCATCTTATT}$	CATAAACCAA
41901	AATTTTACCA	AATTTCAGGC	CAGGCGCAGT	GGCTCATGCC	TGTAATCCCA
41951	GAACTTTGGG	AGGCCGAGGC	GGGCGGATCA	CCTGAGGTCA	GGAGTTAGAG

FIGURE 3N



Dock t No.: CL001196 Serial No.: 09/820,003 Inventors: MERKULOV, Gennady et al. Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

42001	ACTAGCCTCG	CCAACATGGC	AAAATCCCAT	CTCTAGTAAA	AATACAAAAA
42051	TTAGCCAGGC	GTGGGGGCCC	GTGCCTGTAA	TCCTAGCCAC	TTGGGAGGCT
42101	GAGACAGGAG	AATCGCTTGA	ACCCAGCGGG	CAGAGGTTGC	AGTGAGCCGA
42151	GATCGCGCCA	TTGCACTCCA	GCCTGGATGA	CAGAACAAGA	CTTTGTCTCA
42201	AAAAAAAAA	ААААААААА	AAAAAAATTA	ATCAAATTTC	AAAACCAGGT
42251	TTTGTAGTAC	ATTTAAATTG	CATATTCCAA	AGCAGTTGGG	TTTGCCTGCG
42301	TTGCAGTTTA	ATATTAAGCT	ATACTTCCCT	TTCAAATAAG	GTATTTTCAT
42351	CGTTAAGCCT	GTAAATTCTA	GTTTGTCATT	GTTTAGATAT	TTATAGTCAT
42401	TTTAATATAT	CTGTTTACGG	CCAGCTGCAA	TGGCTAACAC	CTGTAAACTC
42451	AGCACTTTTT	GAGGCCAAGG	TGGGCCGATT	GAGCTCAGGA	GTTCGAGACC
42501	AGCCTGGGCA	ACATAGTGAA	ACTCCATCTA	TACAAAAAAT	CCAAAAAAAA
42551	AAAGACAGGT	GTGGTGGCAT	GTGCCTGTAG	TCCCAGCTAT	CCCGGAGGCG
42601	GAGGCGGGAG	GATGGCTTGA	GCTTGGGAGG	TCGAGGGTGC	AGTGAGCTGT
42651	GATTGTGCCA	CTGCACTCCG	GCCTAGGTGA	CAGAGCAAGA	CCCTGTCTCA
42701	AAAAAAAAA	TCTCTTCACT	CCTTAGCAGT	GGTTATTTTG	TAGCTAGAGT
	TGTCTCACTA				
	TGTTTATTCC				
	TCTTTTTAGG				
	TCGTTATGCC				
	ATCTGACCAC				
	AAGTTTAATT				
	TGCAGTAACA				
	TGTGACAGTG				
	TCCTCACGCT				
	AGATTTTTCA				
43251			TGGAAACCAG		
43301			ATGGCAGCTG		
	CCCGGAGCAA				
	CACTCCAGTC				
	CCTTTTCTCA				
	AATTGCCTGA				
	TCTCCACAAA				
	TTCCCTTGAC				
	TTGTGTGCTG			AATCCTTGTT	GCTTTCCTGA
43701			TTGGTTAGAA		TTTGATGTTT
	ATATTGGCAT				TGAAGTTCAG
	CCATTTTGTA			CTGTCACTTT	
	AGTTTAGTGA				TCTTCCTTGT
	AGAGTTATAA				TTCTTCATAC
43951			GCAGAATATT		GCACACTATG
	TAACAAAACA				TATTGGAAGT
	AATATCAAAC				
	GGAAATAGAG				GTGTGCACAA
44151			ACCTATCTTA		
44201		ATATGCCCAA		TAGAGGGGCT	TCTGTGCTGT
44251			AGTGGTTCAG		
44301			TATCTAGCCC		
	AAAACCATTT				
	GGTAGAGGTA				
	TGTGTGCTAA				
	TCCTCCACAG				
	TAGGAAGCAG				
	AATTAAAACA				
	ATTTTGGTGA				
	AGATCCTAGG				
	TCTGCCCACA				
	AGGTTGAAAT				
	CTGCTGGCAA				
	AAGCTAAACA				
4495I	ACTAAACAGG	CAATTGAAAT	ACATGGTACA	AAAATAAGTG	GTAAGATAAT

FIGURE 30

**TECH CENTER 1600/2900** 



Docket No.: CL001196
Serial No.: 09/820,003
Inventors: MERKULOV, Gennady et al.
Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

45001	TGTAAAATGA	AATGGACAGA	ATATTCAATT	TTCCATCTAT	GAAAATTTCA	
45051	CAATAAAAAT	CATAGTTTAC	TTTGTATTAT	AGGCGTGCTT	GGTGGATCTA	
45101	TTCATCCTCA	CATAAGGCAA	CTGACAAATT	CCTGAAGTTA	CCAATAGTTA	
45151	TTTTGGTGAA	GATCTTTAAT	GCTTCAGAAG	TTTTGTTTTT	GCCTTAATAC	
45201	AGTATAAAGG	GGGAAAGAGT	TCAGAAACTA	TTTTCTAAAG	TAGCTAAATG	
45251	ACACAAAACA	AATGTCAAGA	TACTGTGATG	CCATGCCGTG	CACTTCATTT	
45301	TTACACAGTA	AAAGTTGTTT	AAATTGTCAG	CTTATTCTTG	GTGAGTTAGC	
45351	GGAAACATTA	CATGAACTTA	AGATGAGCAT	ATTTACAGAC	TTAAGTTTGG	
45401	AAAATTCCAG	CGTTCTTTTC	CCCATGGCAG	TAAAGATTGG	GATTTACAAC	
45451	AAATTTCAGC	ATGCCTTAAG	ATTTGCTTCT	ATGTATACGC	CAATAAATGT	
45501	GGTTCTGGAA	AAAATATATA	CCCCTTTATA	CCCCCATTTT	CAAGTACAAA	
45551	CGGTTCAAAG	CTACTACAGG	TTTTAATAAT	CTGTTCACTT	AGTAAAGGGA	
45601	ATTACCACTT	GTTCTAAATA	TAAGGTGCTG	CCATAAATTA	GTTTACATAG	
45651	TGAAGAAGAG	TGTTCTTAAA	TCTAAGCAGC	TGCACACTCT	GTGAAATCCT	
45701	TTCAGAATGA	TAGTCATTGT	GGTCTGAGCA	GTAATTTCCT	ATTCTTCGAC	
45751	CTTGGATTGA	ATTTCCCTTA	GCCTACATCT	TGCCTTTCCA	GCATATCTTA	
45801	CCTCAAACCT	TCTTTGTGTT	CCATTCCCAC	CTAAGCTTCA	AAATAGCCCT	
45851	GTGTTGACGT	CGTCTTCCAT	TTGCTGAGCT	TACCTATGGA	TCTCCAAGAA	
45901	CCCAGATCTT	GAAACTGCTG	ATCCAGCTTT	GAGTATCATC	ACTTCCCTGT	
45951	GGATTTAACT	TCCATTAATT	TTAAGGGACT	ACTAAGTTAT	TCCAGTGTGG	
46001	CATCACAGTG	CAGTTAGCAA	GCTCAGCTAC	TTGACTCTAA	TTTGGCCATG	(SEQ ID NO:3)

#### FEATURES:

Start: 2181 Exon: 2181-2203 Intron: 2204-27090 27091-27163 Exon: Intron: 27164-33853 33854-33949 Exon: Intron: 33950-42859 42860-42991 Exon: Intron: 42992-43239 43240-43434 Exon: Stop: 43435

#### CHROMOSOME MAP POSITION:

Chromosome 2

#### ALLELIC VARIANTS (SNPs):

WITTERTC /	AKTANIS	(SNPS):				
DNA				Protein		
Position	Major	Minor	Domain	Position	Major	<u> Minor</u>
397	T	-	Beyond ORF(5')			
2326	A	G	Intron			
3486	С	A	Intron			
6651	-	Α	Intron			
8190	T	-	Intron			
8281	T	С	Intron			
11546	A	G	Intron			
11670	C	T	Intron			
11688	A	G	Intron			
14938	A	С	Intron			
22261	G	A	Intron			
22852	G	Α	Intron			
27253	A	С	Intron			
28098	-	A	Intron			
28597	G	T	Intron			
31431	С	T G	Intron			
35704	С	T	Intron			

FIGURE 3P





35728

С

#### Docket No.: CL001196 Serial No.: 09/820,003

Intron

T

Inventors: MERKULOV, Gennady et al.

Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

35/28	Č		Intron					
36690	C	T	Intron					
41002	G	С	Intron					
41033	A	G	Intron					
43161	С	T	Intron					
43765	A	G	Beyond ORF					
44713	G	T	Beyond ORF	'(3')				
44831	С	T	Beyond ORF	'(3')				兰
Context:								FECH CENTER
								$\equiv$
DNA								- 55
Position								
397					ACTGTAGCCTCCGCC			ළ
	GGGTTCA	AGCAATTTT	CCTGCCTCAGCCTC	CCGAGTAGCTGC	GATTACAGGCACGC	:GCCA		2
	CCATGCC	TGGCTAATT	<b>ITTGTATTTTTAG</b> 1	'AGAGACAGTGTT	TTCACCATGTTGGCC	:AGGC		2
	TGGTCTT	GAATTCCTG	ACCTCGTGATCTGT	CCGTTTTGGCC1	CTCAAATTCCTGAG	ATTA		1600/2900
	CAGGCAT	GAGCCACCG	AGCCTGGCCAGTTT	'TCTGAGTTTTTA	atttgaaatcaaaat	'AAGC		
	[T,-]							
	TTTTTTT	TTTTTTTAA?	rgggctttagagtc	:CAGGGTAACGAA	ACACTTTTTGGTGCC	TTAT		
	ACTGAAC	CATTCAGGG?	PATTCCTGGGGTGG	JTGACCGTGTTC#	ATTTCAGAAACCAAC	ATGT		
	TCATTTC	AGAAACCAA!	ACTCGGGTAACTTT	TGATAAGTTCAT	CAACTAAGGCCCAT	GGCA		
	GAATTTG	AGGGCTAAGG	GGTGTAATTAGT	;TATGGGTAGAA#	TAAGTGCCTTCTT	CTAT		
	ATTTTGG	CGTTGTAGG	AATTTAAAGTGATI	'CTGCAGTAAGTC	CTCAGGAGACAATTI	TCTT	(SEQ	ID
NO:16)								
2326	GCTGATT	GTGTTCTAG	GGACGGAGTAGGG	GAAGACGTTTGC	CTCTCCCGGAACAGC	CTAT		
	CTCATTC	CTTTCTTTC	GATTACCCGTGGCG	CGGAGAGTCAGC	GCGGCGGCTGCGGC	CAGCA		
	AGGGCGG	CGGTGGCGG	CGGCGGCAGCTGCA	GTGACATGTCC#	AGCATGAATCCCGAA	TAGT		
	GAGTTCA	GGAGAGCAC	CGGTCGGCTGGGTC	CGTGGGCCAGCT	TGGGGGATCTTAAA	4GGGG		
	TCGAGGA	GGGTTGGGG	CAGAAGTCGGGGCA	ATCGGCTGGGGTC	AGGCGAGGGTGATG	GGTC		
	[A,G]							
		CTGGCGGCC	GGAGTCGGGCCCC	ATTGTCTGACGC	CGGAGGGGCGGCCGC	:GCGG		
					CCGGGTCAGGTTAGA			
					GGGGCGGTGTGAAG			
					CTAAGGGGAGGGGA			
					CGCACTCTGCGGAGC		(SEQ	TD
NO:17)	01000110						(529	
110.11,								
3486	СТСССАА	ርጥርርጥርጥጥር ነ	\ \	ለር <b>ል</b> ርጥጥጥር ጥጥር ርርር	CTCTCCTCAATGGC	ירריירי		
3100					ATAATTGGAAGAGAC			
					GAAAATCAGTATTT			
					BACATTTTCCCCTA			
					GCTCTTGCAAAATG			
	[C,A]	ACCAGIIIA	octoncioicnini	GIGIGICACAIC	GCICIIGCAAAAIC	CIIA		
		CTA ATTACTO	פר המיניים איני איני איני איני איני איני איני	· እ እ ጥርጥጥጥጥር ር እ ረ	CTAAACAGAAACCGT	יאכידיא		
					TTGTAGTGACATTI			
					SACAAAGTTGGTTTT			
					TTCTTGGTAACAATA TTCAGGAAATTTTC		(000	TD
NO 10)	ACAIGGA	ITTACIGCI	ITAICGAGGIITAI	AGACCICIACIO	311CAGGAAA1111C	,IGAA	(SEQ	ענ
NO:18)								
CCT1	mmmasaa	3.C3.MM3.3.C3.	N N M C C M M N N N N N N N N N N N N N	1001000001CT	100mas accements	mmcm		
6651					GCTCACGCCTGTAA			
					ATGACCAGCCTGGCC			
					GTGTGGTGGTGCAC			
					GAACCTGGGAGGCG			
		GAGTCCAGAT	CATGCCACTGCAC	TCCAGCCTGAGG	GACAGAGTGAGACT	CCTC		
	[-,A]					m		
					CGTGATTATTCTCA			
	ATTTTC	ATAATCCACT	regettecagtega	ATTTTTTTTAGTGT	CAAGAAAATAATTI	TGAT		

FIGURE 3Q





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	TGGTTCATCTTTAAGGAATGTGTTAAGAATAAAGCATGTCTACCTGTCTTCAGTATACCA GCTAACTATAGTAGGAAGAAATATAGTAGTCTACTTAGATCAACCTATAATTCTTTAATGC AGAAAAAGTTTAAAGTATTTACCTTATTTTTAGCCCCCATCCCCTTAAGTATATCATGGC	(SEQ ID
NO:19)		(522
8190	AGACCGGCCTGGCCAATGTGGTGAAACCCTGCCTCTACTAAAAACACCAAATTAGCTAGG CGTGGTGGTGTGCGCTTGTAGTCCCAAGCTACTGAGGAGGCTGAGACAAGAGAATCGCTT GAATCTGGGAAAAAGAGGTTGCCGTGAGCCAAGATTGGCCACTCCAGCCTGGGTG ACAGAGTGAGATTCTGTCTCAAAAAAAATAAAAAATTTCCCCCTTTAATCAAATT AAGTTAAAATGAGGGATGTTAGACAGTTTTTAACCATCAAATATTTTAGTTTAGTTTTTT [T, -] TTTTTAACGTTGTCTTAAAGATGGAAGTGCTTCAAAATCAAATCTTCCTTGCCAGTTCTC TACTTGGCTTCTTTTTTTTTT	(070 77
NO:20)	TTAGTAGAGACAGGGTTTCACTATGTTGGCCAGGCTGGCCTCAAACTCCTGACCTCGTGA	(SEQ ID
8281	CTGAGGAGGCTGAGACAAGAGAATCGCTTGAATCTGGGAAAAAGAGGTTGCCGTGAGCCA AGATTGGCCACTGCACTCCAGCCTGGGTGACAGAGTGAGATTCTGTCTCAAAAAAATAAA AAATAAAAATTTCCCCCTTTAATCAAATTAAGTTAAAATGAGGGATGTTAGACAGTTTTT AACCATCAAAATATTTTAGTTTAG	(SEQ ID
NO:21)	CITOTOTOAGCCACCOCCITCTACTTOGCTTTTAAAGGAATTTTGCTTTCTGAG	(SEQ ID
11546	GTTACATTTAACCCATTTATGGTCGTGTAGCCATACTCACGTTACATTTGATGCATCTGC TCCCTTTGTGTCTATATACTCATATAACATTTTGATAAAGTTATAAGCAGTTCACACCA AGGCTGTTCATGAACCTCAGATTAAGAATACTTGATTTAGGAGATTGAAAACAGAAAAGA GAATGTTAAATCATGATATCAATATTAAAATGTGAAAATCTGAGAGTGACAAAGCTTAGC TTTAAATCTGGTATCCCAAACTCATTTGAGTTTTTTTTTT	(SEQ ID
NO:22)		, <b>-</b>
11670	TGTTCATGAACCTCAGATTAAGAATACTTGATTTAGGAGATTGAAAACAGAAAAGAGAAT GTTAACTATCATTATCAATATTAAAATGTGAAAATCTGAGAGTGACAAAGCTTAGCTTTA AATCTGGTATCCCCAACTCATTTGAGTTTTTTTTTT	(SEO ID
NO:23)	· · · · · · · · · · · · · · · · · · ·	,
11688	TAAGAATACTTGATTTAGGAGATTGAAAACAGAAAAGAGAATGTTAACTATCATTATCAA TATTAAAATGTGAAAATCTGAGAGTGACAAAGCTTAGCTTTTAATCTGGTATCCCAAACT	

FIGURE 3R

(SEQ ID



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GCTGGAGTGTAGTGGTGTGATCTTGGCTCACTGCAACCTCCACCTCCCAGGTTCAAGTGA TTCTCCTGCCTCAGCCTCTGAAGTTGCTGGGATTACAGGCTGCGCCACCACCCCCAGCTA [A,G] TTTTTTGTATTTATAGTAAAGACGGAGTTTCACCTTATTGGCCAGGCTGGTCTCAAACTC CTGATCTTGTGATCCTCCCGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGTGTGAGCCA CTGTTCCCGGCCTAATTTGAGTTTTAAAATGTGGAGTTTAAGATGTTAGTCTTAAAGTGG GTTAGATGAAATTTATAAAAATAGTCAAATAGCTAAATTTATAAAAGGCCATTTGAAACA ATTTTGTGAAATATATATGTGGATAATTATGTAGTGCTTTATGTGTAGATTGGTGGTTA (SEO ID CATGGTAGTGCACCTGTAGTCCCAACCACTTGGGAGGCTGAGGTGGGAGGATTGCCTG AGGCCAGGAGTTTGAGACCTGGGCAGCATATGAAGACCCTGTCTCTAAAAAAACTAAAAAT AAAAAATAGCCAGGTGTGGTTGGTGTGCTTGTGGTCCCAGCTACTCAAGAGGCTGAGGCA  ${\tt AGAGGGTTGCTTGAGCCCAGAAGTTGGAGGCTGCCGTGAACTGTGATTGCACCACTGCAC}$ [A, C] AGGGATTTAAGAAGGGTTTGTGAGGTATGTATTATTATAAATGGGCTTTTAACTTTACC CTTCACATCTTGGGTTGAAATTAATTGTATCCATTCTCAGTTTTTCTGTCTTGCTATATA TTTAAACTTGGAGACTTAGAGGTCATGGATGTCTTTCTATGAAAAGCAAATGAAGCAGAG GGCTGCCTTCTCTTGCTGTAGAGGGCACACTTGCTGCAGAGCATGTTACTGTTTTATGCA TTGCTAGGCTTTGGGAGTTGTGACTTGTATGATCATAGTACTTACAACTATTAGTTGGCA (SEQ ID CACCCACAGATAGCTATGTCAAACGTAAGGGTGGAGAAACACAGACCCCAAACTTCTCGA GGGTAGAAAATATGAGGTTATAGTAGATTAGAACTACAAAAAGCTAGAGGAAGTTCTGAA CTGGAAACAGTGGATAGGATTTACTAGAATAATTTACGAGGGTGACAATTGTAAATCTTC CCCAGGCTGGAGTGCAATGGCGCAGTCTCTCCTCACTGCAACCTCCGCCTCCTGGGTCCA [G, A] GTGATTCTCCTGCCTTAGCCACCCAAGTAGCTGGGATTACAGGCATCTGCCACCATGCTG GTCTTGAACTCCTGACCTCAGGTAATCCACCCACCTTGGCCTCCCAAAGTGCTGGGATTA CAGGTGTGAGCCACCGCGCCCAGCCAAATTTTTATTGGTTTCTAAACTAGCGTAATTTAG TTTTTTCACTTAAGTCAAAATTATATTATTGTAGGATAAAAACTTAGTGATCCAAATTC (SEO ID ATCCAAATTCATGAGGAATGAAGAATAAATACATTTAAAGTCTTACCATTTGCTAAATTA

NO:26)

NO:24)

14938

NO:25)

ATCCAAATTCATGAGGAATGAAGAATAAATACATTTAAAGTCTTACCATTTGCTAAATTA
GTCTTGGCTCTTTGTACCAAAATTCTGTCCTTGTGCTCTGTAATTTTATATTTTGTATATT
TTCTATCAACATTTTTACTGTGTGGTGTTTTTGTAAATTATAAAAACGTTTTAAAGCAAAC
TCAGAACAATGAATTCTCACGAATATTCAGTATATTACAGTTGAGAAATAAACTACTTC
TGTAGTAGGTAATTTAAAATGTCCCAATGCAAGTTAACGTGTCACTGATCACGCTATTCA
[G, A]

NO:27)

27253 GCTTAAGCCATGCATGGGCTTTATAGGAGATGTAGTCTTCACAGTGAGTTGTTATTTGTA
GCTGTGTTTTTGTTATAGCTTATAGCAATGCAGTGTGCTTTTTATTAACATCATT
TTCTTTTTCTTTTTGCAGTGATTATTTATTCAAGTTACTTCTGATTGGCGACTCAGGGGT
TGGAAAGTCTTGCCTTCTTCTTAGGTTTGCAGTAAGTTGAAATTGAAATGTCTTTACAAT
TAATGGTACAATTAATGCTATGTATGTTTTCTAGGTAGATAAAATTAAACAGTTTTATTC
[A, C]

FIGURE 3S



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TTTAAATTAAACTTTAGTAGAATAAAAAGAAAAAGCAGAGCCAGGTGACGCAGTGGATCA (SEQ ID

NO:28) 28098

CTTTAAATTTAGCATGTTTCCTGGCCAGGTGCGGTGGCTCACGCCTGTAATCCCAGCACT
TTGGGAGGCCGAGACGGGCGGATCACAAGGTCAAGAGATTGAGACCATCCTGGCTAACAC
GGTGAAACCCCGTCTCTACTAAAAATACAAAAAATCAGCTGGGTGTGGTGCCACACGCCT
GTAGTCCCAGCTACTCGGGAGGCTGAGGCAGGAGAATCGCTTGAACCCAGGAGGCGGAGG
TTGCAGTGAGCTGAGATGCTCCCACCTCCAGCCTGCAACAGAGCAAGACTGTCTC

(SEQ ID

NO:29) 28597

(SEQ ID

NO:30)

21431 CTGCATTTTTTTTTTTTTTTGGTTTGAGATGGAGTCTCGCTCTGTCGCCCAGGCTGGA
GTGCAGTCGTGCAATCTCGGCTCACTGCACCCTCATGGGTTCAAGCGATTCTCC
ATCTTGGTCTCCTGACTAGCTAGGTTTACAGGCGTGTGCCATCACACCCACTAATTTTTT
GTATTTTAGTAGAGACAGGGTTTCACCATGTTGGCCAGGCTGGTCTTGAACTCCTGATC
TAAAGTAGAGCCTCCCACCTTGGCCTCCCAAAGTGCTGGGATTACATATGTGAGCCACTGC

(SEQ ID

NO:31)

ATGTGTGATCATTGGTGTTTATAAGATTTGGGTGTGTATTCGTGTGAAACATTCATAT
TTTGTTACTTTCCTGTGGCTGGAAGGGATCTTATAGGACACTGTCTTTCATCTTTGTCTG
TCTTTCATCTTTAATAGGAATTTCTTTTCCATGCCTGAAGGCCTCATTTTGAACATTTTG
TTTGTTTGTTTTTTTTATTTTTTTGAGATACAGTATTGCTCTGTCTCCCAGGCTGGAGTGCA
GTGGCGCGATTTGAGCTCACTGCAACCTCCGCCTCCTGGGTTCAAGTGATTCTCCTGCCT
[C, T]

(SEQ ID

NO:32)

FIGURE 3T

TECH CENTER 1600/2900



NO:37)

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and the same of th		
	[C,T] ATGTGTGTACCACCATGCCCGGACAATTTTTTTTTTTTT	(SEQ ID
NO:33)		
36690	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	
	ATTCCTCCGCCTTGTAGAGCTGCCTGAATCAGATTAATTCCTCTTTTATTGGCAAGCCTG	(SEQ ID
NO:34)		
41002	GAGTTGAGGACTAATGTTTCTATATCACATCCTGATAATCTCCACAGTTATGAAAACTAA ACTATTTCCCCTCCTACCACTTTTCCCCAACTTTATTTTAATGGAATTTTTTGATT TCTTGATTGTTTTGTAATAGTGGGACACAGCCAGGACAGATCTCCACAATCACCT CCAGTTATTACAGAGAGGACCCATGGCATCATGTTTGTGTATGATGTGACAGATCACGTAA GTTCCAAGAGGAGATTGTGTTACAGTGACCAAGTAGGAAGCCATTATTTGATTAATGTCA [G, C] ATTCATTTACTACTTCATATATAAGCCATCAGTATTAATTTTATGGCAGAAAACTTTGTC CACTCTCAAATATAAATGTGAATCACTTAAAAAGACATTTGTTTTCCTGTAATAAATA	
	GAGTTGCTTGGCTTATACTGTGTTCTTGGTGTTAAGTATTAACAGGAATATGGCCTGGTA	(SEQ ID
NO:35)		
41033	CTGATAATCTCCACAGTTATGAAAACTAAACTATTTCCCCTCCCT	(SEO ID
NO:36)		,
43161	AGTCCTTCAATAATGTTAAACAGTGGCTGCAGGAAATAGATCGTTATGCCAGTGAAAATG TCAACAAATTGTTGGTAGGGAACAATGTGATCTGACCACAAAGAAAG	
NO - 37)	ACTCCAGTCAAGCAGTCAGGTGGAGGTTGCTGCTAAAATTTGCCTCCATCCTTTTCTCAC	(SEQ ID

FIGURE 3U



NO:40)

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Inventors: MERKULOV, Gennady et al.
Title: ISOLATED HUMAN RAS-LIKE PROTEINS...

43765 NO:38)	AATGAATTTGCAATCTGAACCCAAGTGAAAAAACAAAATTGCCTGAATTGTACTGTATGT AGCTGCACTACAACAGATTCTTACCGTCTCCACAAAGGTCAGAGATTGTAAATGGTCAAT ACTGACTTTTTTTTTT	(SEQ ID	TEC		
44713 NO:39)	AAGCAGCACCTTTCCTAATTGGCAAATGATCAGACTAATGTGTGCTAATGTTTTTCTTCC ATGCTTTCAGTCAGACTCAACTATTTTATCCTCCACAGTTGCTTAACTTGGTGTTGGAGG AGGGTTTAAGCATTAAGATAGGAAGCAGGAAATTTGATTGCTCTAAATTTAGAAATTATA TCCCTAAAAATTAAAACATGAATACTGGGTGGTAATGATAATTGAGGCAAATGTATTTAT TTTGGTGACATTTTGCATATATGAAGATTTTCTGAAATAGGACCTTCAAGATCCTAGGGG [G,T] TTTTGTTTGGTTTTTAATTGTGAGGAATAAAAAATCTTCTGCCCACACTGGCATTTTAAG GTGACTGAGGTCAAACGTTGTTTCCTTAGGTTGAAATAGCAGCCAAAACATTCTTCACGC AGGGGCTTGGGAATAGGCTGCTGGCAACACATTTTGTTGTGGGCTCCTTAATTTAATGAT AAAATTTAAGCTAAACACAAGCCAAAAATGAATAGGTTTTTTTAATTTTTTCACT AAACAGGCAATTGAAATACATGGTACAAAAATAAGTGGTAAGATAATTGTAAAATGAAAT	(SEQ ID	ECH CENTER 1600/2900	APR 1 6 2003	
44831	GGAGGGTTTAAGCATTAAGATAGGAAGCAGGAAATTTGATTGCTCTAAATTTAGAAATTA TATCCCTAAAAATTAAAACATGAATACTGGGTGGTAATGATAATTGAGGCCAAATGTATTT ATTTTGGTGACATTTTGCATATATGAGAGATTTTCTGAAATAGGACCTTCAAGATCCTAGG GGGTTTTGGTTTTGTTAATTGTGAGGAATAAAAAATCTTCTGCCCACACTGGCATTTT AAGGTGACTGAGGTCAAACGTTGTTTCCTTAGGTTGAAATAGCAGCCAAAACATTCTTCA [C,T] GCAGGGGCTTGGGATATGGCTGCTGGCAACACATTTTGTTGTGGGCTCCTTAATTTAATG ATAAAATTTAAGCTAAACACAAGCCAAAAAATGAATAGGTTTTTTTAATTTTTTCA CTAAACAGGCAATTGAAATACATGGTACAAAAATTAAGGTAAAAATCATAGTTTACT TTGTATTATGGACAGAATTCAAATTCAATTTTCCATCTATGAAAATTCACAATAAAAATCATAGTTTACT TTGTATTATAGGCGTGCTTGGTGGATCTATTCATCCTCACATAAAGGCAACTGACAAAATTC	(SEQ ID			

## FIGURE 3V